STUDY OF SOCIAL COGNITION, SOCIAL SKILLS AND FUNCTIONAL OUTCOMES IN PATIENTS WITH BIPOLAR DISORDER

A DISSERTATION SUBMITTED TO

BABA FARID UNIVERSITY OF HEALTH SCIENCES, FARIDKOT (PUNJAB)

IN THE PARTIAL FULFILLMENT

FOR THE AWARD OF DEGREE OF

M. PHIL

IN

CLINICAL PSYCHOLOGY

2022

Submitted By

GURSABEEN KAUR

DEPARTMENT OF CLINICAL PSYCHOLOGY
DAYANAND MEDICAL COLLEGE AND HOSPITAL
LUDHIANA, PUNJAB

DECLARATION BY THE CANDIDATE

I hereby declare that the dissertation entitled "**STUDY OF SOCIAL COGNITION, SOCIAL SKILLS AND FUNCTIONAL OUTCOMES IN PATIENTS WITH BIPOLAR DISORDER**" submitted towards partial fulfillment of the requirements for the award of **M.PHIL in Clinical Psychology** degree to BFUHS is a compilation of original work carried out by me under the supervision of **Palak Upadhyay,** Assistant Professor, Department of Clinical Psychology, **Dr. Bholeshwar Prasad Mishra,** Professor & Head, Department of Clinical Psychology, and **Dr. Mitthat Miglani,** Assistant Professor, Department of Psychiatry. No part of this thesis has formed the basis for the award of any degree previously.

_____

GURSABEEN KAUR
Department of Clinical Psychology,
Dayanand Medical College & Hospital,
Ludhiana, Punjab

Date:

Place:

CERTIFICATE OF SUPERVISORS

This is to certify that the work incorporated in this dissertation entitled "**STUDY OF SOCIAL COGNITION, SOCIAL SKILLS AND FUNCTIONAL OUTCOMES IN PATIENTS WITH BIPOLAR DISORDER"** has been carried out by **Gursabeen Kaur** under our direct supervision. The data incorporated in this thesis is original and genuine and has been carried out by the candidate herself.

Signature of Supervisor

Palak Upadhyay
Assistant Professor
Department of Clinical Psychology
DMC&H, Ludhiana

Signature of Co-Supervisors

Dr. Bholeshwar Prasad Mishra
Professor & Head
Department of Clinical Psychology
DMC&H, Ludhiana

Dr. Mitthat Miglani
Assistant Professor
Department of Psychiatry
DMC&H, Ludhiana

Date:

ENDORSEMENT BY THE HEAD OF THE INSTITUTE

This is to certify that the dissertation entitled "**STUDY OF SOCIAL COGNITION, SOCIAL SKILLS AND FUNCTIONAL OUTCOMES IN PATIENTS WITH BIPOLAR DISORDER"** is a bonafide research work done by **Gursabeen Kaur** under the supervision of **Palak Upadhyay,** Assistant Professor, Department of Clinical Psychology, **Dr. Bholeshwar Prasad Mishra,** Professor & Head, Department of Clinical Psychology, and **Dr. Mitthat Miglani,** Professor, Department of Psychiatry, in this institution.

Principal

Dr. Sandeep Puri
Principal
DMC&H, Ludhiana

Date:

COPYRIGHT

Declaration by the Candidate

I hereby declare that the Baba Farid University of Heath Sciences, Faridkot, shall have the rights to preserve & use this dissertation in print or electronic format for academic/study purpose by the research scholar/students.

Signature

Gursabeen Kaur
Department of Clinical Psychology,
Dayanand Medical College & Hospital,
Ludhiana, Punjab - 141001

Date:

© Baba Farid University of Health Sciences, Faridkot

ACKNOWLEDGEMENT

This dissertation has been kept on track and been seen through to completion with the support of my teachers, family, well-wishers, friends and colleagues. My thanks go to each and every one of them.

First and foremost, I'm thankful to ***God Almighty*** *for showering his blessings and giving me the strength to execute this project.*

My sincere gratitude to my incredible mentor ***Dr. Bholeshwar Prasad Mishra****, Professor and Head, Department of Clinical Psychology, Dayanand Medical College and Hospital, Ludhiana for his words of encouragement, guidance, and advice. I greatly appreciated that when training me you took the time to break things down to a level that I could understand and then build upon. Thank you, sir, for transforming my mistakes into valuable lessons. It was my privilege to work under your leadership with each day being a new learning experience.*

My heartiest thanks to my supervisor ***Ms. Palak Upadhyay****, Assistant Professor, Department of Clinical Psychology for her constructive feedback, kind support, and advice throughout this project. Your patience and guidance made it easier for me to learn and complete this project.*

I owe a special gratitude to my co-supervisor ***Dr. Mitthat Miglani****, Assistant Professor, Department of Psychiatry, Dayanand Medical College and Hospital, Ludhiana for her advice, input on this project, and continued support every step of the way. She always raised my morale in the difficult times.*

I want to offer my sincere thanks to ***Dr. Ranjive Mahajan****, Professor& Head, Department of Psychiatry,* ***Dr. Navkiran Sooch Mahajan****, Professor, Department of Psychiatry,* ***Dr. Rupesh Chaudhary****, Professor, Department of Psychiatry and* ***Dr. Pankaj Kumar,*** *Associate Professor, Department of Psychiatry for their assistance and suggestions.*

To my confidant, the yin to my yang, ***Juslin****, thank you for fielding a ridiculous number of phone calls, for calming me down, and for proofreading anytime, anywhere. A special thanks to* ***Tamanna, Vaishnavi and Aavleen****, for their valuable support throughout.*

I am fortunate to have been blessed with ***Tanya Sharma, Sussana John and Ankitdeep Kamboj*** *as my seniors. Since the day I joined, your continued support is the one thing I can always count on. You showed me patience, guided and motivated me whenever any situation arose. You are the gems of my life. Words can neither qualify nor quantify how helpful your guidance and advice has been.*

I am grateful for my parents and my sister whose constant love and unconditional support kept me motivated and confident. My accomplishments and success are because they believed in me.

A special thanks to my friends Simran kaur, Pooja Bharadwaj and Vishal Ranjha for being my support system and cheerleader.

I am also thankful to the departmental staff for their help.

Gursabeen Kaur

ABBREVIATIONS

BD	Bipolar Disorder
FAST	Functioning Assessment Short Test
HDRS	Hamilton Depression Rating Scale
IPSAQ	Internal, Personal and Situational Attribute Questionnaire
RMET	Revised reading the mind in the eyes task
SSI	Social Skills Inventory
ToM	Theory of Mind
YMRS	Young Mania Rating Scale

ABSTRACT

Introduction: Bipolar disorder (BD) is a debilitating mental illness. The recurrent mood disturbance, lingering residual symptoms between episodes, hospitalizations and disrupted cognitive processing interfere with the functioning of the individual. Given the debilitating effects of bipolar disorder patients are likely to experience restrictions in their social interactions. Patients with bipolar disorder can present social skills deficits affecting their social functioning.

Aim: Our aim was to evaluate and compare social cognition (theory of mind and attributional style), social skills and functional outcomes across all the 3 phases of bipolar disorder (depressive phase, manic phase and remission phase). We wanted to explore the relationship between social skills, theory of mind, attributional style and functioning in bipolar disorder.

Materials & methods: The sample consisted of 90 bipolar disorder patients 90 bipolar patients (30 in remission phase, 30 in depressive phase and 30 in manic phase) where the diagnosis was established as per DSM 5 criteria. Purposive Sampling method was used for the purpose of sample selection. The selection of participants was done on the basis of the inclusion criteria and exclusion criteria. Socio Demographic Proforma was filled containing the basic information of the patient. Information was collected through Hamilton Depression Rating Scale (HDRS), Young Mania Rating Scale (YMRS), Revised Reading the Mind in the Eyes task (RMET), Internal, Personal and Situational Attribute Questionnaire (IPSAQ), Functioning Assessment Short Test (FAST) and Social Skills Inventory (SSI). The data was assessed using appropriate statistical package.

Results: ToM deficits were found in all the groups i.e. manic, depressive and remission Bipolar. Significant difference was also found between all the three groups for negative internal attributions. Remission group had more tendency to attribute negative events to self. Impairment in functioning was highest in depressive group, followed by manic group and then the remission group. Social skill deficits were present in depressive and manic group. Significant relationship between low SSI index score and a tendency to attribute negative events to self in remission group.

Conclusion: Social cognition, social skills and functioning are important area of study in Bipolar disorder. On the basis of the above-mentioned points, we conclude that we have successfully studied these variables in the BD patients.

Clinical Significance: The findings would help in more efficient planning of therapeutic interventions and rehabilitation programmes for bipolar patients. It will also aid in highlighting the specific target areas to improve social skills functioning. Timely intervention will help to prevent further deficits and impairments in psychological and social functioning so that the quality of life is not compromised.

Keywords: Bipolar disorder, social cognition, social skills, social functioning, Theory of Mind, attributional style.

TABLE OF CONTENTS

S. NO.	TOPIC	PAGES
I	INTRODUCTION	1-18
II	AIMS AND OBJECTIVES	19
III	REVIEW OF LITERATURE	20-29
IV	MATERIALS AND METHODS	30-38
V	OBSERVATIONS AND RESULTS	39-93
VI	DISCUSSION	94-101
VII	SUMMARY AND CONCLUSIONS	102-103
VIII	LIMITATIONS	104
IX	FUTURE DIRECTIONS	105
X	BIBLIOGRAPHY	106-117

APPENDICES – I

- PROFORMA
- MASTER CHART

APPENDICES – II

- APPROVAL LETTER OF THESIS PLAN
- THESIS PLAN

LIST OF TABLES

Table No.	Title	Page No.
1	shows the distribution of different age group between manic, depressive and remission groups	39
2	shows the gender-wise distribution of the cases between the manic, depressive and remission groups	41
3	shows the distribution of background of the cases between the manic, depressive and remission groups	43
4	shows the comparative distribution of RMET Performance in patients in the manic, depressive and remission groups	45
5	shows the comparative distribution of FAST Performance in patients in the manic, depressive and remission groups	46
6	shows the comparative distribution of I.P.S.A.Q. negative items Performance in patients in the manic, depressive and remission groups	48
7	shows the comparative distribution of I.P.S.A.Q. positive items Performance in patients in the manic, depressive and remission groups	50
8	shows the comparative distribution of externalizing bias and personalizing bias I.P.S.A.Q. mean performance in patients in the manic, depressive and remission groups	52
9	shows the comparative distribution of Performance on S.S.I subscales in patients in the manic, depressive and remission groups	54
10	shows the comparative distribution of Performance on S.S.I index in patients in the manic, depressive and remission groups	56
11	shows the relationship between RMET scores and FAST scores in patients in manic phase	58
12	shows the relationship between RMET scores and IPSAQ scores in patients in manic phase	60
13	shows the relationship between RMET scores and Total	62

	SSI score in patients in manic phase	
14	shows the relationship between FAST scores and IPSAQ scores in patients in manic phase	63
15	shows the relationship between FAST scores and Total SSI scores in patients in manic phase	64
16	shows the relationship between IPSAQ scores and Total SSI scores in patients in manic phase	66
17	shows the relationship between RMET scores and FAST scores in patients in remission phase	68
18	shows the relationship between RMET scores and IPSAQ scores in patients in remission phase	70
19	shows the relationship between RMET scores and Total SSI score in patients in remission phase	72
20	shows the relationship between FAST scores and IPSAQ scores in patients in remission phase	73
21	shows the relationship between FAST scores and total SSI score in patients in remission phase	74
22	shows the relationship between IPSAQ scores and Total SSI scores in patients in remission phase	76
23	shows the relationship between RMET scores and FAST scores in patients in depressive phase	78
24	shows the relationship between RMET scores and IPSAQ scores in patients in depressive phase	80
25	shows the relationship between RMET scores and Total SSI scores in patients in depressive phase	82
26	shows the relationship between FAST scores and IPSAQ scores in patients in depressive phase	83
27	shows the relationship between FAST scores and Total SSI scores in patients in depressive phase	84
28	shows the relationship between IPSAQ scores and Total SSI scores in patients in depressive phase	86

LIST OF FIGURES

Figure No.	Title	Page No.
1	shows the distribution of different age group between manic, depressive and remission groups	40
2	shows the gender-wise distribution of the cases between the manic, depressive and remission groups	42
3	shows the distribution of background of the cases between the manic, depressive and remission groups	44
4	shows the comparative distribution of RMET Performance in patients in the manic, depressive and remission groups	45
5	shows the comparative distribution of FAST Performance in patients in the manic, depressive and remission groups	47
6	shows the comparative distribution of I.P.S.A.Q. negative items Performance in patients in the manic, depressive and remission groups	49
7	shows the comparative distribution of I.P.S.A.Q. positive items mean performance in patients in the manic, depressive and remission groups	51
8	shows the comparative distribution of externalizing bias and personalizing bias I.P.S.A.Q. mean performance in patients in the manic, depressive and remission groups	53
9	shows the comparative distribution of Performance on S.S.I subscales in patients in the manic, depressive and remission groups	55
10	shows the comparative distribution of Performance on S.S.I index in patients in the manic, depressive and remission groups	57
11	shows the relationship between RMET scores and FAST scores in patients in manic phase	59
12	shows the relationship between RMET scores and IPSAQ scores in patients in manic phase	61

13	shows the relationship between RMET scores and Total SSI score in patients in manic phase	62
14	shows the relationship between FAST scores and Total SSI scores in patients in manic phase	65
15	shows the relationship between IPSAQ scores and Total SSI scores in patients in manic phase	67
16	shows the relationship between RMET scores and FAST scores in patients in remission phase	69
17	shows the relationship between RMET scores and IPSAQ scores in patients in remission phase	71
18	shows the relationship between RMET scores and Total SSI score in patients in remission phase	72
19	shows the relationship between FAST scores and total SSI score in patients in remission phase	75
20	shows the relationship between IPSAQ scores and Total SSI scores in patients in remission phase	77
21	shows the relationship between RMET scores and FAST scores in patients in depressive phase	79
22	shows the relationship between RMET scores and IPSAQ scores in patients in depressive phase	81
23	shows the relationship between RMET scores and Total SSI scores in patients in depressive phase	82
24	shows the relationship between FAST scores and Total SSI scores in patients in depressive phase	85
25	shows the relationship between IPSAQ scores and Total SSI scores in patients in depressive phase	87

INTRODUCTION

Bipolar disorder (BD) is associated with both long-term and persistent impairment in the individuals who suffer from this condition. This debilitating state of mental health is characterized by mood disturbances as well as disrupted cognitive functioning and impaired social functioning[1]. Individuals with BD along with impaired social cognition may have difficulties in their social skills. These deficits are typically correlated with difficulties and conflicts in interpersonal relationships, lower quality of life and social isolation.

Bipolar disorder

Bipolar disorder (BD) is amongst the most common and severe psychiatric disorder. It is a chronic and disabling mental illness characterized by recurrent mood episodes, with periods of depressive symptomatology or manic symptomatology as well as periods of remission of mood symptoms. It has been ranked as one of the 20 leading medical causes of disability. According to National Mental Health Survey done in 2015, the lifetime prevalence of bipolar disorder in India is 2.6–7.8%[2].The mean age of onset in most individuals is about 25 years of age[3]. However, there are patients who may develop symptoms in childhood or later in their life. Research has found early age of onset to be associated with a family history of mood disorder[4]. Onset before the age of 17 years has been found to be associated with genetic history of bipolar disorder, more severe course of illness, multiple episodes of mania and depression and treatment resistance[5]. Early manifestation of the disorder can be discrete causing difficulty in the diagnosis of the disorder. The mean period between the actual onset of the symptoms and the first consultation is 5 years and 10 years or more for the manifestation and the introduction of mood stabilizers[6].

In a national representative sample, one in every four persons diagnosed with bipolar I disorder reported a suicide attempt[7]. Relapse rate remains

high despite available treatments and about two-thirds of patients do not return to work.

Frequency of Episodes:

There is general agreement that the duration between the initial episodes is often much longer as compared to the later full episodes of bipolar disorder. Patients with an early age of onset of symptoms along with a family history of affective disorder report an increased frequency of episodes or more continuous symptoms[4]. The treatment given during the early episodes may also have an impact on the duration of episodes since early symptoms often go unnoticed and therefore may be inadequately be treated[5]. Research findings through retrospective life charting have shown that some patients begin cycling at yearly frequency from their first episodes[8]. However, in the present era of multiple medications use, it is difficult to evaluate variations in cycle frequency in a clear fashion.

DIAGNOSTIC CRITERIA:

According to American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM-5)[9] the criteria for the diagnosis of Bipolar I Disorder is as follow:

The manic episode may have been preceded by and may be followed by hypomanic or major depressive episodes.

Manic Episode

A. A distinct period of abnormally and persistently elevated, expansive, or irritable mood and abnormally and persistently increased goal-directed activity or energy, lasting at least 1 week and present most of the day, nearly every day (or any duration if hospitalization is necessary).

B. During the period of mood disturbance and increased energy or activity, three (or more) of the following symptoms (four if the mood is only irritable) are present to a significant degree and represent a noticeable change from usual behavior:

1. Inflated self-esteem or grandiosity.
2. Decreased need for sleep (e.g., feels rested after only 3 hours of sleep).

3. More talkative than usual or pressure to keep talking.

4. Flight of ideas or subjective experience that thoughts are racing.

5. Distractibility (i.e., attention too easily drawn to unimportant or irrelevant external stimuli), as reported or observed.

6. Increase in goal-directed activity (either socially, at work or school, or sexually) or psychomotor agitation (i.e., purposeless non-goal-directed activity).

7. Excessive involvement in activities that have a high potential for painful consequences (e.g., engaging in unrestrained buying sprees, sexual indiscretions, or foolish business investments).

C. The mood disturbance is sufficiently severe to cause marked impairment in social or occupational functioning or to necessitate hospitalization to prevent harm to self or others, or there are psychotic features.

D. The episode is not attributable to the physiological effects of a substance (e.g., a drug of abuse, a medication, other treatment) or to another medical condition.

Note: Criteria A-D constitute a manic episode. At least one lifetime manic episode is required for the diagnosis of bipolar I disorder.

Hypomanic Episode

A. A distinct period of abnormally and persistently elevated, expansive, or irritable mood and abnormally and persistently increased activity or energy, lasting at least 4 consecutive days and present most of the day, nearly every day.

B. During the period of mood disturbance and increased energy and activity, three (or more) of the following symptoms (four if the mood is only irritable) have persisted, represent a noticeable change from usual behavior, and have been present to a significant degree:

1. Inflated self-esteem or grandiosity.

2. Decreased need for sleep (e.g., feels rested after only 3 hours of sleep).

3. More talkative than usual or pressure to keep talking.

4. Flight of ideas or subjective experience that thoughts are racing.

5. Distractibility (i.e., attention too easily drawn to unimportant or irrelevant external stimuli), as reported or observed.

6. Increase in goal-directed activity (either socially, at work or school, or sexually) or psychomotor agitation potential for painful consequences (e.g., engaging in unrestrained buying sprees, sexual indiscretions, or foolish business investments).

C. The episode is associated with an unequivocal change in functioning that is uncharacteristic of the individual when not symptomatic.

D. The disturbance in mood and the change in functioning are observable by others.

E. The episode is not severe enough to cause marked impairment in social or occupational functioning or to necessitate hospitalization. If there are psychotic features, the episode is, by definition, manic.

F. The episode is not attributable to the physiological effects of a substance (e.g., a drug

of abuse, a medication, other treatment).

Note: Criteria A-'F constitute a hypomanic episode. Hypomanic episodes are common in bipolar I disorder but are not required for the diagnosis of bipolar I disorder.

Major Depressive Episode

A. Five (or more) of the following symptoms have been present during the same 2-week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood or (2) loss of interest or pleasure.

1. Depressed mood most of the day, nearly every day, as indicated by either subjective report (e.g., feels sad, empty, or hopeless) or observation made by others (e.g., appears tearful). (Note: In children and adolescents, can be irritable mood.)

2. Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by either subjective account or observation).
3. Significant weight loss when not dieting or weight gain (e.g., a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day. (Note: In children, consider failure to make expected weight gain.)
4. Insomnia or hypersomnia nearly every day.
5. Psychomotor agitation or retardation nearly every day (observable by others; not merely subjective feelings of restlessness or being slowed down).
6. Fatigue or loss of energy nearly every day.
7. Feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick).
8. Diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others).

ETIOLOGY OF BIPOLAR DISORDER:

Genetic Studies:

BD has a strong genetic component with hereditary estimates as high as 85%[10]. In twin studies, the concordance rates for identical twins is 57% percent and 14% percent for fraternal twins[11]. In the first-degree relatives the risk of developing the disorder is around 10% with a lifetime risk of 1%[12]. Adoption studies, albeit very few, affirm the significance of heritability in BD[13]. Regardless of significant genetic influence, the responsible genetic component has yet not been identified[14]. Complex genetic heterogeneity exists, i.e., several susceptible genes interact with the environment and predispose to similar clinical symptoms causing difficulty in the identification process[15]. Chromosomes 18q and 22q are the two regions with strongest evidence for linkage to bipolar disorder.

Neurotrophins, Neurotransmitters, and Endocrinology:

Neurotrophins play an important role in the development, structural and functional remodeling of the central nervous system. BDNF is one member of the family of neurotrophins. reduction of the serum levels of BDNF have been associated with disease severity in depression[16].

In the 1960s, the contribution of monoaminergic neurotransmitters as fundamental pathogenetic factor in affective disorders became a topic of scientific interest with the amine hypothesis [17]. On the basis of this hypothesis, depression was caused by a reduction of noradrenaline and serotonin whereas increase of the biogenic amines was postulated as the cause of mania. Researchers now widely believe that dysregulation in dopamine and serotonin systems interact with deficits in other neurotransmitter systems, like GABA and Substance P, to produce symptoms of mood disorders[18].

Research into the significance of the neuroendocrinological system in patients with affective disorders has focused on the hypothalamic-pituitary-thyroid axis. Findings indicate that subclinical deviations of the thyroid metabolic rate present an etiologic as well as illness supporting element in bipolar disorder, particularly in rapid cycling. thyroid hormones seem to accelerate the effect of conventional medication[19]. High-dosed thyroid hormone administration along with classical medication initially has a positive effect on course of affective disorders and on the therapy-resistant acute depressive symptoms[19].

Neuroanatomy:

Imaging techniques such as computer tomography (CT) and magnetic resonance imaging (MRI) when used in BD patients, uncovered various brain structural changes. neuropathological investigations in postmortem of BD patients provide evidence for dysfunctional corticolimbic and corticostriatal control circuits, along with changes in the frontal lobe[20]. The main anatomical changes in BD patients uncovered thus far are[21]:

- An enlargement of the third ventricle

- Increased subcortical hyperintensities
- volume reduction in Frontal/prefrontal region seems to appear more frequently in bipolar patients as compared to healthy controls.
- Reduction in dosolateral-prefontal activity is the most conspicuous finding in bipolar depressive patients
- Increased amygdala activity

Circadian Rhythm:

Irregular circadian rhythms may contribute to the episodes of mania and depression in BD patients. Data suggests abnormal melatonin hormone (which helps sustain the sleep/wake cycle) release patterns in BD patient. Some studies have found increased melatonin secretion during mania as composed to decreased melatonin secretion during depression[22]. Depressive patients in addition to diurnal affect variation, experience early awakenings, shortened REM sleep latency, delayed attainment of minimal body temperature and changes in endocrinological secretion profiles. Irregular circadian rhythms are also thought to contribute to sleep disturbance in approximately 70% BD patients which continues to persist even in the remitted phase[23]. Increased sleep can result in clinical improvement in 5–25% pf the patients in hypomanic and manic. Whereas sleep deprivation can result in 50% clinical improvement in depressive patients [24].

Psychological theories:

Psychodynamic factors

The psychodynamic school of thought has major contributions by Sigmund Freud. In addition to depression being result of disturbances in infant-mother relationship during the oral phase, Freud emphasized it to be caused by **real or imagined object loss** and use of introjection defense mechanism [25].

Among other psychodynamic theorist, Edward Bibring considered depression as a phenomenon being caused by discrepancy between extraordinarily high ideals set by a person and his inability to meet those

goals[26]. Edith Jacobson considered depression as being similar to a powerless, helpless child victimized by a tormenting parent.

Fairbairn (1940,1941)[27] viewed depression as a reaction which occurs when the circumstances disturb the object relations of individuals of the depressive type. As a result hate and aggression are turned inward against the self.

Manic states according to Karl Abraham, reflect an inability to tolerate a developmental tragedy or they may also result from a tyrannical superego, which produces intolerable self-criticism that is then replaced by euphoric self-satisfaction [28]. According to Bertram Lewin mania is the result of the patient's ego being overwhelmed by pleasurable impulses, such as sex, or by feared impulses, such as aggression[29]. Klein also viewed mania as a defensive reaction to depression, using manic defenses such as omnipotence, in which the person develops delusions of grandeur[30].

Behavioral theories:

According to the behavioral scientist, depression is the result of a person's interaction with his environment. Ferster (1973)[31] defined depression as a reduction in the frequency of positive reinforcement of the individual behaviors. In operant or Skinnerian terms, the depressed person is on a prolonged extinction schedule i.e. the learned behavior decreases in frequency due to lack of positive reinforcement[32].

Cognitive theories:

The theory of learned helplessness was proposed by Seligman in 1974. In this theory, when animals or humans discover they have little or no control over aversive events, they may feel helpless, and as a result, they become unmotivated to respond to the failure, leading them to exhibit passive behavior[33]. The cognitive version of learned helplessness later developed by Abramson, Seligman, and Teasdale (1978) took into account attributional processes (i.e., how people explain why an event occurs)[34].

Cognitive models of mania are similar to the hopelessness model of depression. This model states that a vulnerability can promote dysfunctional schemes and facilitate cognitive errors (for example, overgeneralizations and stable attributions in the face of anticipated or current positive experiences), which can lead to a more positive mood or an irritable mood. Thus, self-esteem grows, more activities are planned, warnings from others are ignored, and taking medication is questioned. This may create a vicious cycle leading to an escalation of manic symptoms [35].

Mansell and Pedley, attempt to explain mood swings by examining how individuals interpret changes in their internal states for example, increased energy and waking up too early. Functional emotional regulation can be disturbed by attributing a high personal significance to internal changes (e.g., anxiety that fatigue signals depression, morning awakening indicates creative energy) and attempting to control these states. According to the authors, these counterproductive control agendas that increase the risk of clinically relevant depression or manic symptoms are referred to as "ascent behavior" and "descent behavior." The former leads to an increase in activating while the latter is responsible for a decrease in the current state of arousal[36].

Courses of Bipolar disorder:

Recurrence risk:

In case of the affective disorders, there is a lifelong risk of the return of the affective symptoms. Most of patients have symptomatic recovery after the initial manic episode, within a few days of hospitalizations. However, complete recovery takes time and the patient may have impairment lasting many weeks[37]. Recurrence rate is slightly higher for Bipolar disorder II patients as compared to the type 1 patients[38].

Rapid Cycling:

Studies indicate that about one fifth of the patients with bipolar disorder experience a more severe course wherein they experience four or more episodes within a year[39]. This is known as rapid cycling and the patients who experience it have more psychosocial impairments as compared to the other BD patients. Rates of substance use as well as suicide are higher in the patients who experience rapid cycling. An early age of onset, depressive episode preceding the manic episode at the onset and the treatment with anti-depressants has been suggested as important predictor of rapid cycling[40].

Remission in bipolar disorder:

Due to the multidimensionality of the symptomatic presentation, comorbid psychiatric conditions as well as the functional impairment across the psychosocial domains, defining a clear-cut criteria for remission and recovery in bipolar disorder is quite a daunting task. Several definitions of remission in depression have been proposed. The most frequently cited definitions is a total score of 7 points or less on Hamilton Depression Rating Scale (HAM-D)[41]. Hirschfeld et al. defined remission in BD as absence or minimal symptoms of both mania and depression for at least 1 week. Sustained remission was defined as the absence of symptoms for at least eight consecutive weeks and perhaps as many as 12 weeks[42].

SOCIAL COGNITION:

The National Institute of Mental Health (NIMH), in 2006, defined social cognition as the mental operations that underlie social interactions, including perceiving, interpreting, and generating responses to the intentions, dispositions, and behaviors of others. Social cognition encompasses a broad range of domains, including social perception, emotion recognition, theory of mind, and attribution.[43]

Social perception has been defined as decoding and interpreting the social cues and the ability to integrate contextual information and social knowledge into judgments about other's behaviors. Emotional recognition refers to the ability to perceive and use emotional information. Further, it is a central component of nonverbal communication and utilizes the principles of recognition of changes in facial expression, eye contact, body posture, and movement.[44]

Theory of mind (ToM) depicts the capacity to understand the mental states of other's and to differentiate it from one's own mental state. Patients with impaired ToM may have difficulty understanding the impact of their behavior on others. This may contribute to their willingness to indulge in reckless behavior or dangerous activities.

Attributional style refers to the manner in which individuals interpret, explain, or make sense of the positive and negative social events encountered in life and is thought to have a significant impact on their behaviors.[45]

Therefore, Social cognition is the aspect that is dedicated to processing social information for adaptive functioning. Given the debilitating effects of bipolar disorder patients are likely to experience restrictions in their social interactions and social networks as compared to healthy individuals. There is an increased interest among research community in utilizing a social cognitive framework to understand the mechanisms underlying social impairment among patients with neuropsychiatric disorders.

Theory of mind:

The term theory of mind first originated from a seminal article proposed by primatologists Premack and Woodruff (1978) who proposed that chimpanzees might be capable of inferring the mental states of their own species[46].

Research scientist in the 20th century, adopted this concept to explain the behavioral symptoms in children and adults with Autism and

schizophrenia[47]. The present definition of theory of mind, describes it as the ability to understand and infer the mental states and emotions of others[48]. Interpreting others' behavior is based on the awareness that individuals have mental states, emotions and motivations that may be different from one's own[49].

The development and evolution of ToM begins from early childhood. During the early months of life, infants generally in face-to-face interactions. When they are 2 months old they focus on the eyes and mouths of other individuals in their vicinity. They become distressed when others stop interacting with them and they are unable to see the movement of the mouth and the eyes. At the age of 1 year, they begin to engage in object-person interactions[50]. At 24 months, pretend play comes into picture. children begun to view people within a framework involving goals and intentions and not as inanimate objects. Between ages 4-5, children begin to think about others' thoughts and feelings. They begin to recognize the false belief of others i.e., child's understanding that other individuals can have beliefs about the world which are false. By 9 years of age infants begin to recognize faux pas, i.e. what may hurt others' feelings and therefore, be better left unspoken[51].

A major element of ToM involves the accurate decoding of mental states from the available perceptual social data such as facial expressions, tone of voice, and gestures[52]. The concept of social perception can be described as the understanding of social roles, societal rules, and social contexts. To make inferences about complex social situations such as status and kinship, individuals must decode social cues (behaviors such as gestures, tone of voice, and facial expressions)[53].

Based on the modular perspective of the ontogeny of ToM, its development is hypothesized to depend on the neuronal maturation of the involved brain regions. ToM mechanisms may be activated by experience, but structure of the mechanism does not depend on it. According to this perspective, cognitive ability develops in a static and inflexible way[54].

Several studies have shown that the degree and nature of the social interactions children experience may have an impact on their development of social understanding[55].

In autism and schizophrenia, ToM deficits have been found to be profound. Data on the function of social cognition in bipolar disorder are scarce, and even less is known about the status of social cognition in these subjects. Additionally, it is not clear whether ToM deficits that have been observed in patients with depressive or manic episodes are persistent after remission from acute phases [56].

ATTRIBUTION STYLE:

Experiences shape human life. The way we behave is modified by our interactions, with other people, and the situation in which they occur. It is human tendency to continuously seek evaluation of their as well as others situations, events, and behaviors. Because of this, every interaction whether it is between a teacher and a student, a mother and a child or shopkeeper and a customer is scrutinized. Individuals seek to provide interpretations and draw conclusions about themselves, others and their environment based on such interpretations. This phenomenon is known as attribution. It is referred to as “an inference about why an event occurred or about a persons or other psychological states” [57].

The term attribution has two primary meanings. First it provides explanation of behavior i.e. why something occurred. Second it provides inference i.e. inferring a trait from a behavior[58].The phenomenon of assigning causal attributions to events is the fundamental basis of the contemporary theories of attribution.

Heider, the father of Attribution theory, argued that individual perception is more complex than object perception, as it involves a lot of information and causes. According to him, individuals have a general tendency to assign casual attribution the environment (external attribution) or something within the person (internal attribution). For example, a student

may conclude that the cause of his poor performance is poor examination condition. This conclusion, indicates that the student is making an external attribution by assigning the cause of his poor performance to an external source [59].

Jones and Davis (1965) gave theory of dispositional inference. In this the theorist have specified conditions whereby an individual infers a constant disposition (personality trait or attitude) from the behavior displayed by an individual [60]. According to them, inference can be drawn from the behavior, which can be studied by its two components namely, social desirability and uniqueness of behavior [61].

Initially, Weiner et al. (1972) classified attributions into two dimensions: locus of control (Internal External) and stability (Stable and Unstable). Four elements of Attributions were identified, viz., Ability, Luck, Task difficulty, and Effort and classified into the two dimensions. Ability and effort were classified as internal whereas task difficulty and luck were classified as external. In terms of stability – ability and task, were classified into stable as they are persistent variables. Effort and luck were classified as unstable because of their potential to change[62]. According to Weiner (1985), the attributional process helps individual assess their environment, apply the knowledge to understand and master the environment[61].

Scholars have verified that individuals have tendencies to explain events or to generalize the way they explain events. This is known as attribution styles or explanatory styles. Attribution style indicates variations behind positive or negative reactions related to an event or individual [63]. Seligman proposed that Depressed people use more pessimistic explanatory style when thinking about stressful events as compared to optimistic individuals. The pessimistic attributions style occurs when internal, constant, and general characteristics are attributed to hostile events. Whereas positive events are characterized by external, temporary, relating to specific reasons.

Sanjuán and Magallares (2009) in their study found that people with a negative explanatory style had a higher tendency of developing depressive symptoms, but the relationship was moderated by uncontrollability of negative events [64]. Mansell et al. in their study found that individuals with bipolar disorder have a tendency to make extreme appraisals about self in the elevated mood states, which may provoke exaggerated attempts to control elevated mood resulting in maintenance of the affective symptoms [65]. Consistent with this hypothesis, individuals with BD have been found to have high levels of extreme appraisals of internal mood states as compared to individuals with healthy controls [66].

FUNCTIONAL OUTCOME:

In the beginning, BD was considered to be comprising of time-limited acute episodes of mania and depression with recovery to euthymia and a favorable functional adaptation between the mood episodes. Morbidity was acute with effective mood stabilizing treatments. However, with recent advances in the research the emerging picture of the disorder is quite different. The recovery between the episodes is slow, risk of reoccurrence high and sustained morbidity is present even with long term use of the affective medications.

The recurrent mood disturbance, lingering residual symptoms between episodes, hospitalizations and disrupted cognitive processing interfere with the functioning of the individual. The functional impairment covers multiple domains, including functioning at work, interpersonal and social functioning.

Social adjustment includes interpersonal relationships, marital status, leisure activities and time. Most of the patients with BD experience impairment in the social functioning. They have difficulty in adapting back to the social life. Specifically, in the country like India where mental illness is considered a stigma, BD patients experience difficulty in transitioning back to the society. Some studies have found that only 19–23% of adult BP-I patients were married whereas others remained unmarried[67].

Another study found that 19–58% of adult BP-I patients were living with their family and had difficulty living by themselves[68].

In the work area, many BD patients have difficulty in returning to the pre morbid level of functioning. They might have difficulty working for the previous number of hours, handling the job pressure and the workload or may have difficulty continuing the same job profile. Unemployment rates among adult BP-I patients, as high as 57–65% in recent studies, even following the syndromal recovery[69].

In general, symptoms of depression have been found to account for more variance in psychosocial impairment as compared to the symptoms of mania. Evidence have been found between the association of impaired social and vocational functioning in BD patients with strikingly high levels of sustained depressive–dysthymic morbidity[70].

In the last decade, research efforts have been focused on finding the potential predictors of functional impairment in BD patients, so as to help formulated targeted therapeutic and rehabilitative interventions aimed at improving functional outcomes in the target population.

SOCIAL SKILLS:

Human beings are social beings. As a part of their social surroundings, they are influenced by the behavior of others and in return impact them with their behavior. Social skills are considered as essential conditions for human beings to live harmoniously in their social surroundings. According to Perez et al.,[71] social skills are culturally normative or socially sanctioned interpersonal behaviors that accurately communicate the emotions and needs of the individual in order to facilitate the achievement of interpersonal goals.

Social skills are essential for everyday life. Socially skilled individuals are able to interact, communicate and relate effectively with others in various situation. Under developed social skills could lead to loneliness, isolation and frustration[72].

According to Liberman, et al. (1989)[73] individuals demonstrate social skills in a wide variety of relational settings, which involves the use of proper verbal and non-verbal reactions. Socially talented people are sensitive to their environment and are aware of how to apply their required skill set. Social skills are different kinds of practices which aids individuals to convey their feelings and needs precisely to others and helps them accomplish their goals. Social skills are based on the social norms of our society. They make us aware of what attitudes and behaviors are considered to be normal, acceptable and expected by the society[74].

Social skills have a significant role in helping an individual establish and maintain good relationships with others, obeying social norms, fulfilling roles and undertaking responsibility and enjoying one‘s rights. Flowers (2008) stated that social skills encourage positive interactions with others. They help an individual become aware of their own feelings and emotions as well as of others[75].

To be accepted in the society, the individual's behavior needs to conform to social norms which are agreed upon by the society in general. This requires the ability to perceive and analyze minute cues of the situation and the individuals. To achieve effectiveness, the individual‘s interaction with others needs to be aligned in a way to attain their intended goals[76]. For the Successful achievement of the goals of interaction complex coordination of different mental and physical abilities is required in a specific interpersonal situation.

Social skills are pertinent for maintaining social, psychological, and occupational well-being[76]. Any deficit or disruption in the process may affect the outcome of "social skill" which may lead to an individual experience anxiety, frustration or even isolation. Evidence suggests that people with poor social skills tend to be less popular among their peers than those having better social skills[77]. In the Occupational setup, persons with social skills deficits are usually associated with low academic achievement[78].

Agaliotis and Kalyva (2008)[79] describe social skills deficits as being caused by either due to deficit in the acquisition process or due to performance deficit. Some individuals have difficulty in interacting with their environment acquisition deficiency. This indicates an that the deficits exist because of the void of a particular social skill meaning that the individual does not possess the action in his or her repertoire of learned behavior. On the other hand, an individual who was able to previously perform an acquired skill set but has difficulty in doing so in the present time may be experiencing performance deficit.

Psychiatric patients often present with deficits in social functioning which may be attributed to the deficits in the performance rather than acquisition deficit. Individuals with depression often experience marked reduction in speech and other social behaviors resulting in their experiencing less social reinforcement from the environment. Lack of reinforcement for their behavior would subsequently increase the social anxiety and consequently worsening the affective symptoms[32].

Even when in remission, patients with bipolar disorder can present social skills deficits. Deficits in these abilities are typically associated with difficulties and conflicts in interpersonal relationships, lower quality of life, and social isolation.

AIMS AND OBJECTIVES

AIM

To study social cognition (theory of mind and attributional style), social skills and functional outcomes across all the 3 phases of Bipolar I Disorder (depressive phase, manic phase and remission phase)

OBJECTIVES:

The following objectives were taken into consideration for the study.

1. To evaluate and compare theory of mind across different phases of bipolar disorder
2. To evaluate and compare attributional style across different phases of bipolar disorder
3. To evaluate and compare functional outcome across the phases of bipolar disorder
4. To evaluate and compare social skills across the phases of bipolar disorder
5. To evaluate the relationship between social skills, theory of mind, attributional style and functioning in bipolar disorder

REVIEW OF LITERATURE

Bipolar disorder (BD) is a common psychiatric illness. The severity and duration of episodes, signs and outcomes vary considerably in the individuals. A person with bipolar disorder can suffer from significant psychological and social impairment, since both depressive and manic episodes are often accompanied by significant behavioral changes that affect employment and social functioning.

THEORY OF MIND

Theory of Mind (ToM) is one of the most complex aspects of social cognition. It is the ability to infer mental states of self as well as others with respect to thought, emotion and intention. Therefore, it is an essential skill for social development and interactions.

In their study to evaluate theory of mind deficits in bipolar disorder Kerr et al. (2003)[80] recruited 48 bipolar patients with 20 bipolar-manic, 15 bipolar-depressed, 13 bipolar patients in remission phase. The present symptomology was assessed using Beck Depression Inventory and Bech Mania Rating Scale. ToM was evaluated using first and second order false beliefs and deceptions task. Results indicated impaired performance on both first and second-order ToM tasks in bipolar depressed and manic patients as compared to the healthy controls. Whereas no impairment was found in the remitted patients.

Inoue et al. (2004)[81] in their study titled “Deficiency of theory of mind in patients with remitted mood disorder” investigated ToM on 50 patients. The sample included 34 patients with unipolar disorder and 16 patients with bipolar disorder currently in remission. The depressive symptoms were assessed using Hamilton Rating Scale for Depression. ToM was evaluated using Dr. Martin Brune’s battery consisting of visual tasks. The results indicated deficits on ToM task involving integrating and understanding the perspective of two characters simultaneously (i.e., second-order false-belief questions) in remitted unipolar and bipolar

disorders patients. No significant difference was found on less challenging ToM tests that involved inferring the perspective of a single character.

Montag et al. (2010)[82] examined the theory of mind impairment in 29 euthymic bipolar patients using video based “Movie for the Assessment of Social Cognition’ evaluation. The findings indicated cognitive ToM deficit in euthymic bipolar patients as compared with the healthy controls. No deficits were found in emotional reasoning of the patients.

A cross sectional studied was conducted by Purcell et al (2013)[83] to examine the relationship between the theory of mind and the functional outcome. The sample consisted of remitted bipolar patients and unipolar depressive patients along with healthy controls. The Reading the Mind in the Eyes test was used to assess the ToM. The depressive symptomology was assessed using Inventory of Depressive Symptomatology. Life functioning was evaluated with the help of the Life Functioning Questionnaire. The findings indicated that the lower Reading the Mind in the Eyes test response predicted greater overall life functioning difficulties on the home duties and work duties subscales for the BD group.

Barreraa et al. (2013)[84] conducted a study to investigate the Theory of mind and functionality in bipolar patients as compared to the healthy controls. Reading the Mind in the Eyes test (RMET) and Functional Assessment Short Test (FAST) were used to assess the theory of mind and functioning respectively. The results indicated significant deficit (P = .001) in functioning in bipolar patient as compared to healthy controls in overall functioning on 5/6 domains of FAST scale.

In a meta-analysis review study by Bora et.al (2015)[85] examining the theory of mind in bipolar patients found significant impairment in the performance of the BD group as compared to healthy controls. Severe ToM deficit (d = 1.23) was found in the patients during the acute episode of the illness. The performance on the different ToM tasks including affective/cognitive and verbal/ visual was comparatively more impaired in euthymic bipolar patients as compared to the depressive bipolar patients.

No significant difference was found among the remitted and subsyndromal samples. The findings indicated that the manic episodes, were associated with escalation of ToM deficits. The YMRS scores were significantly related to the severity of ToM impairment.

ATTRIBUTIONAL STYLE

Attributional style is another key domain of social cognition but has been comparatively less explored. It refers to the situation where the cause about the occurrence of positive and negative events is attributed to internal (personal), external (other person), or situational factors by an individual. Although normal attributional biases exist in healthy individuals, extreme or dysfunctional attributional biases are thought to be tied to certain psychopathological conditions.

In their metanalytic review of attributional style in depression, Sweeney and Bailey (1986)[86] examined over 104 studies. The findings indicated a tendency to generate pessimistic attributions (internal, stable, and global) for negative events in depressed patients. The findings for negative events also indicated a positive relation between ability (.32) and depression whereas an inverse relation (—0.17) was found between luck factor of attribution and the depression. The study also found a tendency to generate external, unstable, and specific attributions for positive events in depressed patients.

In a study by Lyon et al. (1999)[87] to examine the social cognition among bipolar patients 45 patients were recruited. Attributional style was measured using Attribution Style Questionnaire (ASQ). The results indicated that the bipolar patients in depressive phase and in remission attributed negative events more than positive events to self as compared to the healthy controls. Also, the bipolar-depressive patients made excessively global and stable attributions for negative events on ASQ.

A cross-sectional study by Reilly-Harrington et.al (2008)[88] on 500 bipolar patients to measure the dysfunctional attitude and attributional style took

place in NIMH-sponsored Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD). Dysfunctional Attitudes Scale (DAS) and Attribution Style Questionnaire (ASQ) were used to measure dysfunctional attitudes and attributional style respectively in the target sample. It was found that the patients with mixed symptom subtype had significantly more negative dysfunctional attitudes and attributional style as compared to the euthymic patients. Also, patients in depressive symptom subgroup had significantly more negative attributional style as compared to other subgroups.

In a randomized control trial conducted by Stange et al. (2013)[89] to study the effect of attributional style on the course of illness in bipolar depressive patients 106 patients were enrolled. The sample was selected from Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD) outpatient unit. Attributional style was measured using Attribution Style Questionnaire (ASQ). Efficacy of psychotherapy and collaborative care on Attribution Style was assessed. Significant relationship was found between extreme attributions and lower likelihood of recovery (p=.01, OR=0.93, 95% CI=.88-.98). Also, Significant relationship was found between extreme attributions and longer time until recovery (p<.01, OR=0.96, 95% CI=.93-.99). The findings also revealed that individuals with pessimistic attributional styles, initial depression severity predicted a lower likelihood of recovery (p=.01, OR=0.64, 95% CI=.45-.91) and longer time of recovery (p<.001, OR=0.76, 95% CI=.66-.88).

Lahera et al. (2015)[90] conducted a study to examine the attribution style of bipolar and schizophrenic patients. The sample consisted of 46 patients with bipolar disorder, 49 patients diagnosed with schizophrenia and 50 healthy controls. Attributional style was assessed using Ambiguous Intentions Hostility Questionnaire. Facial emotion recognition was evaluated using Facial Emotion and Identification Test (FEIT), the Facial Emotion Discrimination Test (FEDT) and the Penn Emotion Recognition-40 (ER-40). Hinting Task was used to assess the theory of mind in the

given sample. The results indicated that patients with BD had significantly impaired attributional styles. Bipolar patients with depressive symptoms had hostile and blame attribution style and a tendency to attribute negative events to others. Significant relation was found between HDRS score and hostility attributional style to global functioning ($r = -0.639$; $P < 0.001$). The study also found deficits in ToM in bipolar patients which was related to deterioration in social functioning.

Another study by Easwaran and Palaniappan 2021[91] on the effect of social cue recognition and attributional bias on social functioning was conducted on 30 bipolar patients in remission phase. Social Cue Recognition Test- Indian Setting, Attributional style questionnaire (ASQ) and Functional assessment short test (FAST) were used for the assessment. Findings indicated that externalizing bias was low in the remitted phase of bipolar disorder. Social cue recognition deficits were found in remitted bipolar patients.

FUNCTIONAL OUTCOMES

Patients with BD because of associated affective disturbances may experience impairment in their social, occupational and social functioning. Research on the relationship between bipolar disorder and functioning has yielded various results.

In a review conducted by MacQueen, Young and Joffe (2001)[92] to examine the psychosocial outcome in the patients with bipolar disorder the focus was on the period of illness when no symptoms were present. The findings indicated the presence of persistent and detectable impairment of functioning in the patients even during the remission. Results indicated that 30-60% of patients with BD were unable to return to full functioning in the occupational and social domains.

A longitudinal analysis by Goldberg & Harrow (2005)[93] examined the subjective life satisfaction and functional outcome in unipolar and bipolar disorder patient. The sample consisted of 157 patients including 35 bipolar manic type, 27 unipolar psychotic depression and 95 unipolar

nonpsychotic depression. Global outcome scale was used to assess global functioning. A 5-point index of work functioning developed by Strauss and Carpenter (1972) was used to measure work performance. Psychotic symptoms and depressive episodes were assessed with Schedule for Affective Disorders and Schizophrenia (SADS). QOL index was used to assess Quality of life in the sample. The results indicated that depressive symptomology and objective assessment of functional impairment contributed to poor QOL in most domains, independent of affective disorder subtype.

Fagiolini et al (2005)[94] investigated the overall functioning in euthymic patients with BD. Work and Social Adjustment Scale (WSAS), MOODS-SR and PAS-SR were used to assess functional impairment, mood symptomology and panic disorder symptoms respectively. Scores on the WSAS in euthymic patients revealed significant functional impairment as compared to healthy controls.

Another study by Rosa et.al (2010)[95] measured the functional impairment and disability across all mood states in bipolar disorder. The sample comprised of 131 subjects diagnosed with BD (68 in remission, 31 manic and 32 depressed) and 61 healthy controls. Depressive and manic symptoms were assessed using Hamilton Depression Rating Scale (HDRS) and Young Mania Rating Scale (YMRS) respectively. Functional impairment was assessed using Functioning Assessment Short Test (FAST). Patients with depressive BD had significant impairment than those in the manic group in autonomy ($P < 0.001$), leisure time ($P < 0.001$), cognitive functioning ($P < 0.001$), interpersonal relationships ($P < 0.001$) and overall functioning ($P < 0.001$). clinically significant functional impairment was highest in depressive subgroup, followed by manic and then euthymic subgroup.

Lahera et al. (2012)[96] conducted a cross-sectional study to examine social cognition and global functioning in bipolar patients. Hamilton Depression Rating Scale (HDRS) and Young Mania Rating Scale (YMRS)

was used to establish the criteria for euthymia. Functioning Assessment Short Test (FAST) was used to assess psychosocial functioning. Verbal and non-verbal social cognition was measured using Comprehension Faux Pas test and The Emotion Recognition test. It was found that low-functioning euthymic BD patients showed a significant impairment in ($p = 0.027$) on emotion recognition and faux pas test as compared to a high-functioning bipolar group.

Cusi and colleagues (2012)[97] examined the performance of BD patients on complex social cognition tasks. Depressive and manic symptoms were assessed using Hamilton Rating Scale for Depression (HAM-D) and Young Mania Rating Scale (YMRS) respectively. Global Assessment of Functioning Scale assessed the overall functioning. Social Adjustment Scale Self-Report (SAS-SR) evaluated the social functioning of the patient. Social cognition tasks included Reading the Mind in the Eyes Test (RMET) and The Interpersonal Perception Task-15 (IPT-15). Significant RMET performance impairment ($p=0.02$) was found in BD sample as compared to healthy controls. Also, patients with BD were impaired in overall functioning ($U=99.50$, $P=0.001$). Furthermore, deficits on the social judgment task were associated with impairment in psychosocial functioning.

A comparative study carried out by Mehta, Mittal and Kumar Swami (2014)(98) measured the psychosocial functioning in patients with Major Depressive Disorder and Bipolar Disorder. A total of 96 patients (48 with MDD and 48 with BD) were included in the sample. Psychosocial functioning was assessed using Range of Impaired Functioning Tool (LIFE-RIFT). Variables such as occupation, household work, interpersonal social functioning, life satisfaction, leisure and global psychosocial functioning were considered. Although both groups experienced impairment, individuals with Depressive BD subtype had significantly more impairment in the domain of global psychosocial functioning. Also,

depressive bipolar patients had moderate to severe impairments in occupation, interpersonal relations and life satisfaction area.

SOCIAL SKILLS

Social skills include a set of behaviors related to interpersonal skills, interpersonal competence and communication competence.

Goldstein et al. (2006)[99] examined the social skills knowledge and performance in individuals with bipolar disorders. Social skills assessments were conducted using Matson Evaluation of Social Skills with Youngsters (MESSY) self and parent version. The assessment was done during a period of minimal mood symptomatology. The Interpersonal Negotiation Strategy Interview assessed the knowledge of appropriate social skills. Results indicated significant deficits in social skills performance in individuals with bipolar disorder as compared to the HC group. However, knowledge of social skills was intact in both the groups. The authors stated that difficulties in controlling emotions can interfere with the consistent exhibition of appropriate social behaviours.

Perez et al. (2007)[71] conducted a study to evaluate the social skills imbalances in individuals with mood disorder. Social skills inventory (SSI) and The Symptom Checklist-90-Revised (SCL-90-R) were used for the purpose of assessment. The results indicated that in addition to deficits in social functioning, imbalances in social skills are significant indicators of clinical distress in individuals with mood disorder.

Pope et al. 2007[100] conducted a study on 77 BD patients to examine the determinants of social functioning in bipolar disorder. Internal State Scale (ISS) and Social Adjustment Scale (SAS) were used to assess the current mood state and social adjustment of the patients respectively. The findings indicate the presence of moderately severe impairment in functioning in BD group specifically in household and leisure domain. Also, only 30% of the individuals were active in the social situations.

Rocca et al.(2008)[101] examined the social dysfunction in 25 euthymic BD patients. To assess the mood symptomology Hamilton Depression Rating

Scale (HAM-D) and the Young Mania Rating Scale (YMRS). The social skills were measured using Social Skills Inventory (SSI). Comprehension and Picture Arrangement subtest of Wechsler Adult Intelligence Scale (WAIS) ere used to measure social situations and judgement. The findings indicated impaired capacity to cope with adverse social situations in the BD group as compared to the healthy controls. On SSI, lower IHS scores were found on conversational skills/social self-confidence and social openness to new people/ situations domains in BD group.

A cross-sectional study by Depp et al. 2010[102] examined the social competence and social functioning in 164 BD patients. Social competence and social functioning were measured using Social Skills Performance Assessment (SSPA) and Specific Level of Functioning (SLOF) respectively. The results indicated that the social competence was impaired in one third of the BD group as compared to the healthy controls. Also, 64% of the subjects registered impairment on at least one area of the SLOF indicating difficulties in social

A cross sectional study by Martini et al. (2013)[103] examined the affect of BD on behaviour and social skills across internet on 30 BD patients. The assessments were conducted using Young Mania Rating Scale(YMRS) Hamilton Depression Rating Scale(HAM-D), Functional Assessment Screening Tool(FAST) and Satisfaction With Life Scale (SWLS). The findings indicate that BD patients had small social networks in real life settings as well as on internet as compared to healthy controls. The time as well as knowledge about internet was comparatively less in BD group. The authors suggested that effects of BD on social relationship and functioning extend to electronic media as well.

In a study conducted by Fernandes et al. 2018[104] to study the association between social skill deficit and family history of mood disorder. The sample comprised of 37 BD patients. Social skills inventory (SSI) was used to measure the social skills in the sample. both the groups (with/without family history of mood disorder) had significantly lower

scores on SSI as compared to the healthy controls. The group of BD patients with family history of mood disorder had significantly lower scores on conversational skills and social performance domains of SSI ($p = 0.019$). verbal fluency difficulties were also found in this group.

Individuals with Bipolar disorder with impaired social cognition and social skills may get involved in stressful social events more often due to their inability to read what is happening, to weigh the risks involved in a social situation, or to take the right decision deriving from it. Hence, this enhanced likelihood for negative life events would trigger many episodes of the illness and, finally, worsen the course of the disorder. This would deteriorate the functional outcome of the patient. From a psychological treatment perspective, timely assessment would help in early implementation of psychoeducational programs and rehabilitation services.

Although research in social cognition underlying mood disorders has been ongoing since the past decade, there is still much to explore. There is a research gap in the studies on relationship between social cognition and social skills. Also, most of these researches have been conducted in western countries. The differences in family and social structure across cultures, will have an impact on the relationships and measures of social cognition, social skills and the functioning across bipolar disorder. Thus, this study aims to study the above aspects namely social cognition (theory of mind and attributional style), social skills and functional outcomes across all the 3 phases of Bipolar I Disorder (depressive phase, manic phase and remission phase) in India.

MATERIALS AND METHODS

RESEARCH DESIGN:

The study employed the cross-sectional study design, in which the investigator measured the outcome and the exposures in the study participants at the same time. In this design, the participants were selected based on the inclusion and exclusion criteria set for the study. Once the participants were selected for the study, the investigator followed the study to assess the exposure and the outcomes.

SOURCE OF DATA

The present study was conducted at Dayanand Medical College and Hospital, Ludhiana. The data was collected from 90 patients diagnosed with bipolar I disorder (30 in remission phase, 30 in depressive phase and 30 in manic phase), admitted in psychiatry ward or visiting psychiatry OPD.

METHOD OF COLLECTION OF DATA

SAMPLE COLLECTION-

The sample consisted of 90 patients with Bipolar I Disorder where the diagnosis was established as per DSM 5 criteria. A total number of 30 patients in remission phase, 30 in depressive phase and 30 in manic phase were selected for the present study. Purposive Sampling Method was used for the purpose of sample selection. The selection of participants was done on the basis of the inclusion criteria and exclusion criteria mentioned below.

INCLUSION CRITERIA (Remission Phase)

- Diagnosis of bipolar disorder according to DSM 5
- Age group between 18 to 60 years.
- HDRS <7 & YMRS < 12
- Patients willing to give informed consent.

EXCLUSION CRITERIA (Remission Phase)

- Any other psychiatry comorbidity
- History of intellectual disability
- Major neurological disorder or communication disorder
- History of substance use disorder except tobacco use

INCLUSION CRITERIA (Depressive Phase)

- Diagnosis of bipolar disorder according to DSM 5
- Age group between 18 to 60 years.
- HDRS >7
- Patients willing to give informed consent.

EXCLUSION CRITERIA (Depressive Phase)

- Any other psychiatry comorbidity
- History of intellectual disability
- Major neurological disorder or communication disorder
- History of substance use disorder except tobacco use

INCLUSION CRITERIA (Manic Phase)

- Diagnosis of bipolar disorder according to DSM 5
- Age group between 18 to 60 years.
- YMRS > 12
- Patients willing to give informed consent.

EXCLUSION CRITERIA (Manic Phase)

- Any other psychiatry comorbidity
- History of intellectual disability
- Major neurological disorder or communication disorder
- History of substance use disorder except tobacco use

TOOLS FOR ASSESSMENT:

1. Socio-Demographic Proforma
1. Hamilton Depression Rating Scale
2. Young Mania Rating Scale
3. Revised reading the mind in the eyes task
4. Internal, Personal and Situational Attribute Questionnaire
5. Functioning Assessment Short Test
6. Social Skills Inventory

DESCRIPTION OF THE TOOLS:

1. **SOCIO-DEMOGRAPHIC PROFORMA:**

   A semi structured pro forma was designed for the present study in order to collect detailed clinical history of each participant including information related to the following areas:

   - Socio-demographic details including age, gender, MRD number, occupation, education, income, marital status
   - Phase of illness.
   - Scores of all the test.

2. **Hamilton Depression Rating Scale (HDRS):** The HDRS developed by Max Hamilton in 1960, is the most widely used clinician-administered depression assessment scale[105]. It is used to assess the depressive symptom severity. Since its inception, the scale has undergone numerous revisions and has been translated into different languages including French, Italian, Turkish and so on. The scale consists of 17 items arranged in the following order: depressed mood, feelings of guilt, suicidal ideation, initial insomnia, middle insomnia, late insomnia, work and interests, psychomotor retardation, psychomotor agitation, psychic anxiety, somatic anxiety¸ gastrointestinal symptoms, general somatic symptoms, sexual symptoms¸ hypochondriasis, loss of weight and insight.

Test- Retest reliability for the Hamilton depression scale ranged from 0.96[106].

Nine items (1,2,3,7,8,9,10,11,15) are scored on a 5-point scale, ranging from 0 = not present to 4 = severe. Seven items (4,5,6,12,13,14,17) are scored from 0–2 and 1 item (16) is scored from 0-3. The scale yields a severity score from 0 to 52 on 17 items. Scores between 0–7 are considered as being within the normal range. Scores between 8–16 indicate mild depression, 17–23 indicate moderate depression and scores over 24 are indicative of severe depression[107].

3. **Young Mania Rating Scale (YMRS):** The YMRS is a clinician-rated scale used to measure the severity of manic symptoms[108]. It consists of 11 items namely: elevated mood, increased motor activity energy, sexual interest, sleep, irritability, speech, language-thought disorder, content disruptive - aggressive behavior, appearance and insight. Out of 11 items, four items (irritability, speech, thought content, and disruptive/aggressive behavior) are graded on a 0 to 8 scale, while the remaining seven items are graded on a 0 to 4 scale. The total score ranges from 0 to 60 where higher scores indicate more severe mania. Total score ≤12 indicates remission (13-19=minimal symptoms; 20-25=mild mania, 26-37=moderate mania, 38-60=severe mania). The reliability of the scale is 0.84[108].

4. **Revised reading the mind in the eyes task (RMET):** One of the most used Theory of the mind tasks. It was originally developed by Baron-Cohen et al. in 1997. It assesses the capacity of an individual to evaluate others mental states by watching the ocular region of the faces. The Revised reading the mind in the eyes task was developed in 2001[47]. This test is designed to assess first-order ToM (i.e., the ability to understand another person's

thoughts). It consists of 36 pictures of the ocular region of varying actors and actresses. The subject must choose the target word that best describes the mental state observed from the four different options. RMET performance scores are calculated as the sum of the number of correct answers (i.e., a higher score depicts better performance on the RMET). The test-retest reliability ranges from 0.7[109].

5. **Internal, Personal and Situational Attribute Questionnaire (IPSAQ) (Peter Kinderman and Prof. Richard P. Bentall).** The IPSAQ is a brief instrument used to measure the attribution of the individuals. It consists of 32 hypothetical positive and negative situations in second person. It measures the three types of attributes namely: internal attribution, external-personal attribution and external-situational attribution. For each item, the participants are required to state the single most likely cause of the event. The participants are then required to designate these causes as being either primarily due to self (internal attributions), other people (personal attributions) or circumstances (situational attributions). A total of six subscale scores: Three positive and three negative are then generated by adding the number of internal attributions, personal attributions and the number of situational attributions allotted for both the positive and negative items.

Two cognitive bias scores are derived from the above six subscale scores. Externalizing Bias (EB) is calculated by subtracting the number of internal attributions for negative events from the number of internal attributions for positive events. A positive EB score therefore indicates strong self-serving biases (that is, blaming oneself less for negative events than for positive events). Personalizing Bias (PB) indicates the proportion of external attributions for negative events which are personal as opposed to situational and is calculated by dividing the number of personal attributions

by the sum of both personal and situational attributions for negative events. Hence a PB score of greater than 0.5 represents a greater tendency to use personal rather than situational external attributions for negative events.

The IPSAQ scales have adequate reliability (externalizing bias alpha = 0.7189, personalizing bias alpha = 0.7609)[110]

6. **Functioning Assessment Short Test (FAST):** It is a brief instrument designed to measure the functional impairment experienced by the patients with psychiatric disorders. It was developed in Spain in 2007 and is commonly used with patients with bipolar disorder. The scale consists of 24 items measuring six specific areas of functioning namely:

   1) Autonomy refers to the ability to do things by self and to make independent choices and decisions for self.

   2) Occupational functioning refers to the ability to sustain and maintain a paid job according to the education level and to perform efficiently at the tasks at job.

   3) Cognitive functioning is related to the ability to acquiring knowledge, manipulating information and reasoning.

   4) Financial issues involve the to manage one's finances in a balanced way.

   5) Interpersonal relationships refer to the ability to engage in social associations, affiliations and the ability to defend ideas and opinions.

   6) Leisure Time refers to the capacity to engage in hobbies and physical activities during the time the person is not working.

   The items are scored on a 4-point scale where 0 =no difficulty, 1 =mild difficulty, 2 =moderate difficulty, 3 =severe difficulty. The global score is the total of the score obtained on each item. The

higher the score the more severe is the impairment in a particular domain. It has an internal consistency reliability of 0.9.[111]

7. **Social Skills Inventory**: It is a 90-item scale which assesses 6 basic social skills global social skill in both nonverbal and verbal areas. It consists of 6 subscales which measure two dimensions - emotional (nonverbal) and social (verbal). The scales are namely, Emotional Expressivity (EE), Emotional Sensitivity (ES), Emotional Control (EC), Social Expressivity (SE), Social Sensitivity (SS) and Social Control (SC). Emotional Expressivity refers to the ability of the individual to express their emotional states non verbally. Emotional Sensitivity is the ability to receive and interpret non-verbal cues of others accurately. Emotional Control is the capacity to control and regulate ones emotional states. It involves the ability to select the emotion and feelings to be displayed hiding the others. Social Expressivity is the capacity to initiate and guide conversations in any social situation. Social Sensitivity is the ability of an individual to accurately assess and interpret the verbal communications of others. Social control is the ability of an individual to act in different social situations.

90 items of the inventory are grouped into the six scales. Each item is a statement depicting a attitude or behavior. For each item, the subject is required to choose one option that is most suited for him. The items are scored on a 5-point scale where 1 = Not at all like me 2 = A little like me 3 = Like me 4 = Very much like me 5 = Exactly like me. Scores for each scale are calculated individually and range from 15 to 75. The Overall SSI Score indicates the global level of social skill. Generally, the higher the individual's score is, the higher the individual's level of social skill development. Cronbach's alpha coefficients for the SSI scales range from .65 to .88 (M = .73) for the adult sample[112].

PROCEDURE

The study was conducted on 90 bipolar I disorder patients (30 in remission phase, 30 in depressive phase and 30 in manic phase). The participants were selected from the psychiatry ward or visiting psychiatry OPD at Dayanand Medical College & Hospital, Ludhiana. A written consent was duly signed by all the participants. The participants were well informed about the confidentiality of their information. After the written consent was taken from the participants, basic socio demographic information was collected through a semi structured pro forma. The socio demographic proforma included the name, age, sex, marital status, religion, education, occupation, socio-economic status and phase of illness. Current mood state was assessed using Hamilton Depression Rating Scale (HDRS) and Young Mania Rating Scale (YMRS). Social cognition domains, Theory of Mind and attribution styles were assessed in the three groups using Revised Reading the Mind in the Eyes task (RMET) and Internal, Personal and Situational Attribute Questionnaire (IPSAQ) respectively. Functioning Assessment Short Test (FAST) was administered to assess the functioning of the patients in different spheres. Social Skills Inventory (SSI) was used to evaluate the social skills deficits in the patients.

STATISTICAL ANALYSIS

Quantitative analysis was done. Data was described in terms of range; mean ±standard deviation (± SD), median, frequencies (number of cases) and relative frequencies (percentages) as appropriate. Comparison of quantitative variables between the study groups was done using ANOVA. For comparing categorical data, Chi square ($\chi 2$) test was used. Spearman's Rho was used to calculate the correlation between the variables. A probability value (p- value) less than 0.05 was considered statistically significant. All statistical calculations were done using SPSS

(Statistical Package for the Social Science)- SPSS 21 version statistical program for Microsoft windows.

OBSERVATIONS AND RESULTS

Table 1, shows the distribution of different age group between manic, depressive and remission groups

		Phase						Total	Value	df	p-value
		Manic	Manic	Remission	Remission	Depressive	Depressive				
Age group	< 30	12	40%	3	10%	6	20%	21	13.089	4	**0.01**
	31-50	7	23%	18	60%	18	60%	43			
	> 50	11	37%	9	30%	6	20%	26			
Total		30	100%	30	100%	30	100%	90			

Figure 1, shows the distribution of different age group between manic, depressive and remission groups

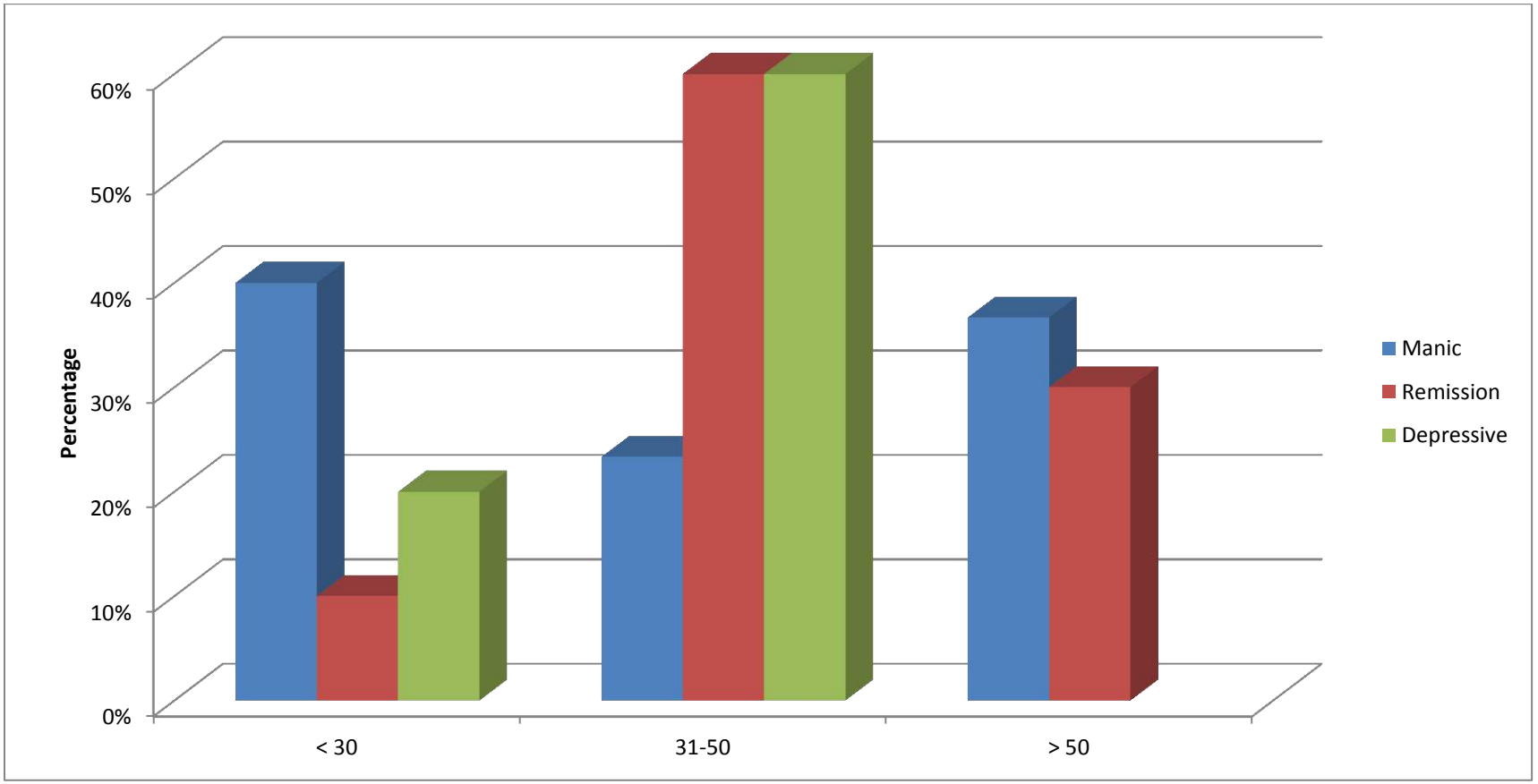


Table 2, shows the gender-wise distribution of the cases between the manic, depressive and remission groups

		Phase						Total	Value	df	p-value
		Manic	Manic	Remission	Remission	Depressive	Depressive				
sex	female	4	13%	9	30%	7	23%	20	2.443	2	NS (0.05)
	male	26	87%	21	70%	23	77%	70			
Total		30	100%	30	100%	30	100%	90			

NS= Not significant

Figure 2, shows the gender-wise distribution of the cases between the manic, depressive and remission groups

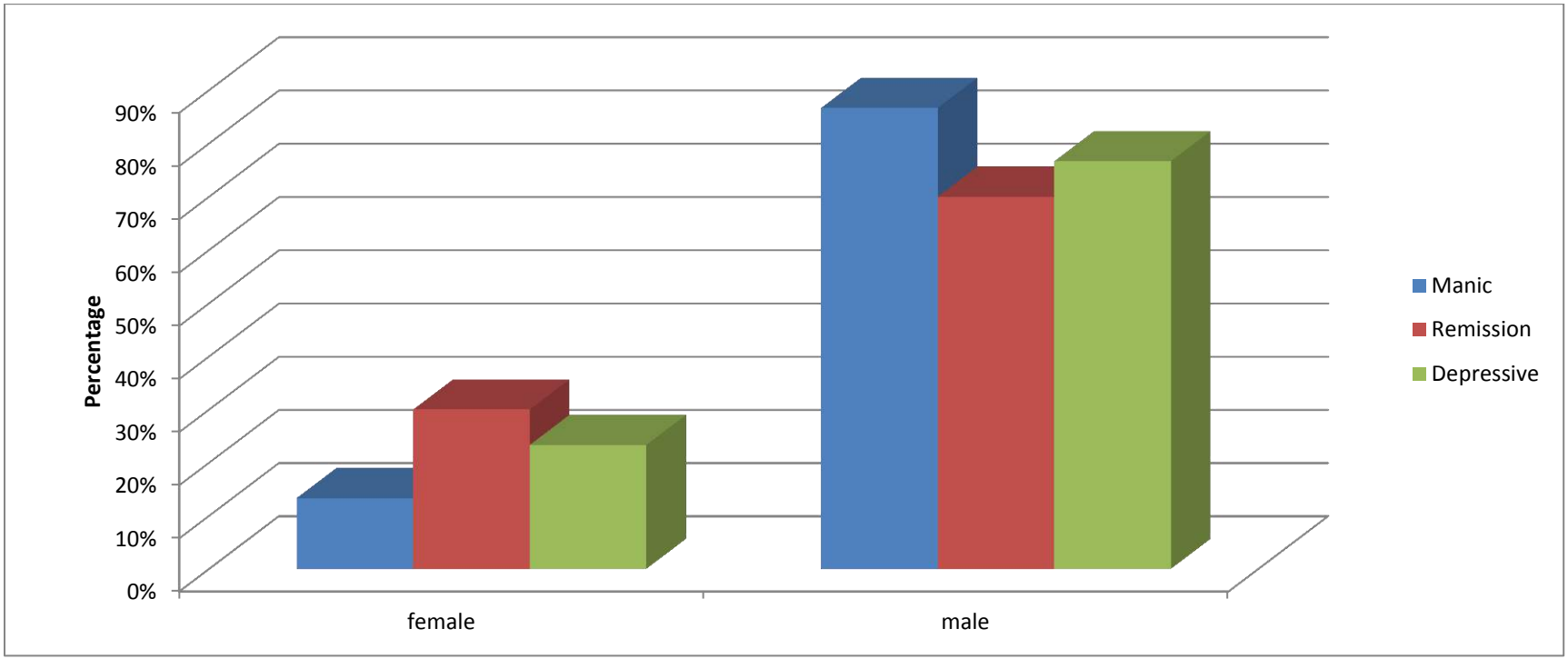


Table 3, shows the distribution of background of the cases between the manic, depressive and remission groups

		Phase						Total	Value	df	p-value
		Manic	Manic	Remission	Remission	Depressive	Depressive				
Address	rural	10	33%	15	50%	12	40%	37	1.744	2	NS (0.05)
	urban	20	67%	15	50%	18	60%	53			
Total		30	100%	30	100%	30	100%	90			

NS= Not significant

Figure 3, shows the distribution of background of the cases between the manic, depressive and remission groups

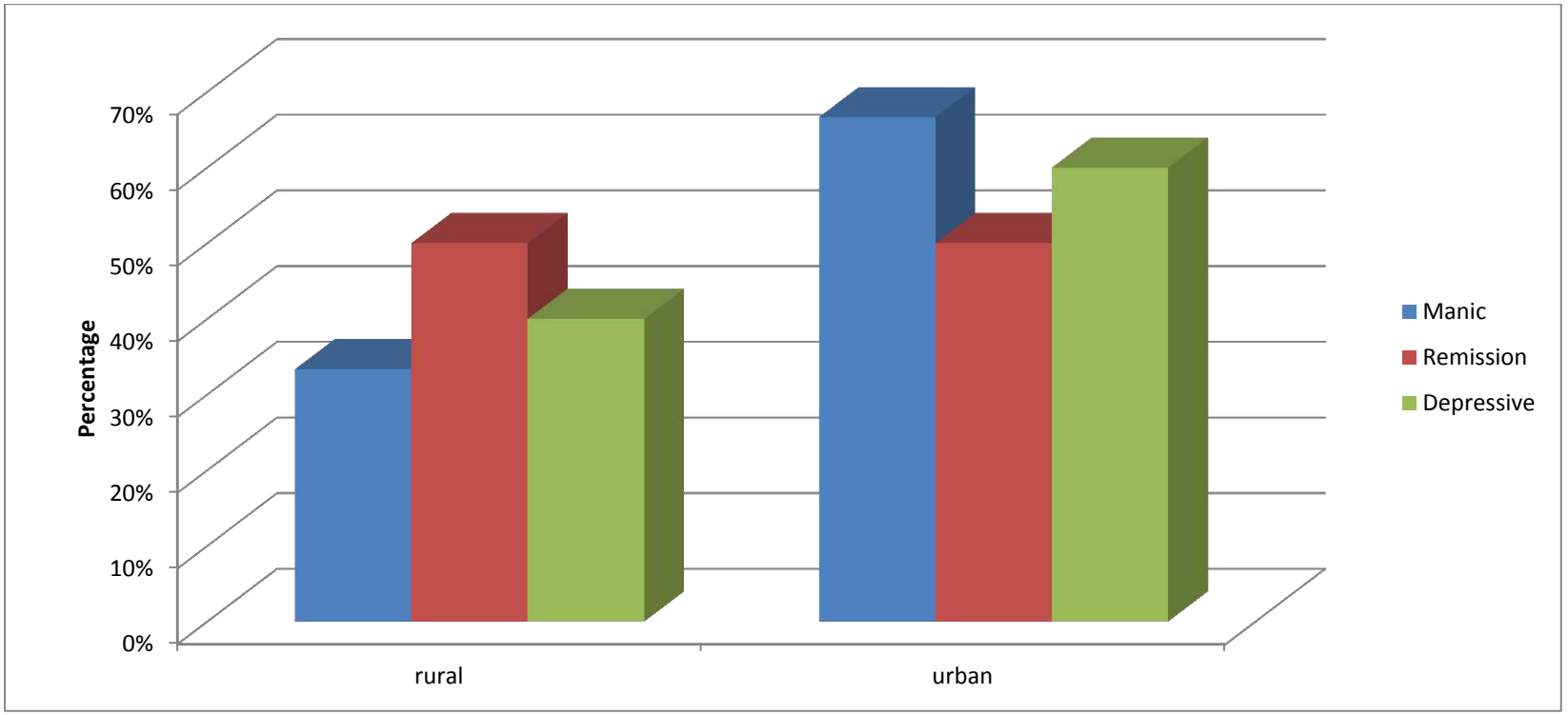


Table 4, shows the comparative distribution of RMET Performance in patients in the manic, depressive and remission groups

	Manic		Remission		Depressive		F	df	p-value	1 vs 2	1 vs 3	2 vs 3
	Mean	SD	Mean	SD	Mean	SD				p-value	p-value	p-value
RMET	18.43	5.56	18.80	2.89	16.73	5.45	1.587	2	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)

NS= Not significant

Figure 4, shows the comparative distribution of RMET Performance in the manic, depressive and remission groups

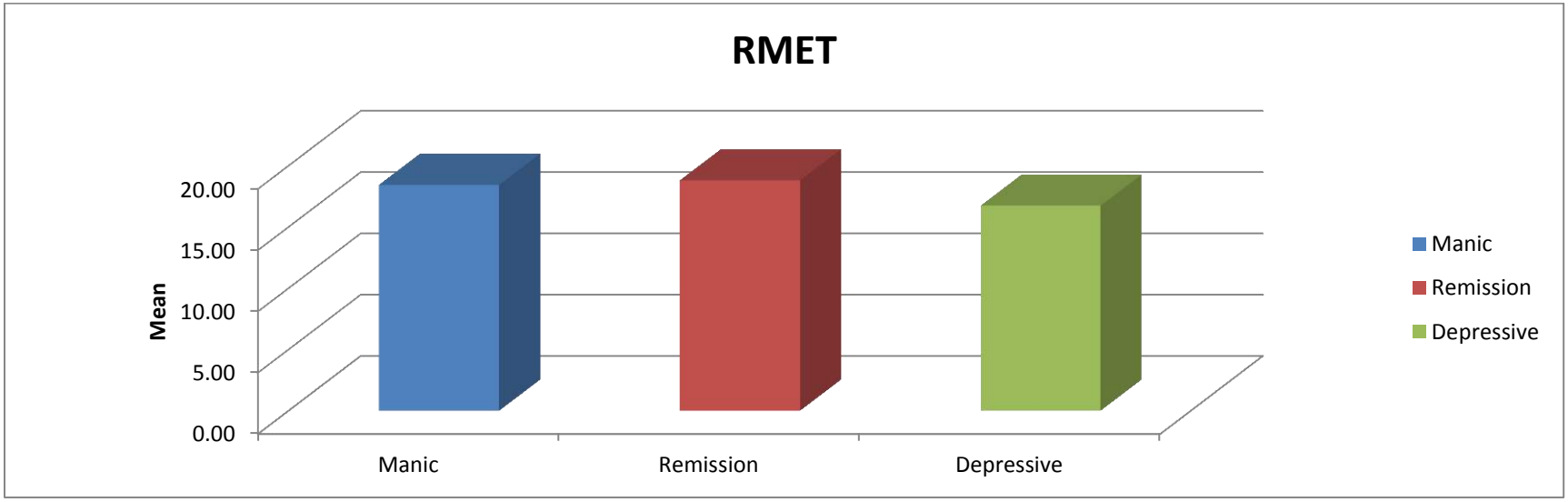


Table 5, shows the comparative distribution of FAST Performance in patients in the manic, depressive and remission groups

	Manic		Remission		Depressive		F	df	p-value	1 vs 2	1 vs 3	2 vs 3
FAST DOMAINS	Mean	SD	Mean	SD	Mean	SD				p-value	p-value	p-value
Autonomy	0.83	1.32	0.77	1.10	2.50	1.63	15.440	2	**0.01**	NS (0.05)	**0.01**	**0.01**
Occupational Functioning	0.73	1.01	0.93	0.98	3.90	2.25	40.150	2	**0.01**	NS (0.05)	**0.01**	**0.01**
Cognitive Functioning	1.47	1.22	1.70	1.53	5.07	2.21	41.760	2	**0.01**	NS (0.05)	**0.01**	**0.01**
financial issue	0.13	0.35	0.80	1.03	1.23	1.28	9.817	2	**0.01**	**0.05**	**0.01**	**NS**
interpersonal relationship	1.83	1.29	1.80	1.13	5.87	2.36	57.910	2	**0.01**	NS (0.05)	**0.01**	**0.01**
leisure time	0.40	0.67	0.30	0.70	2.33	1.09	55.154	2	**0.01**	NS (0.05)	**0.01**	**0.01**

NS= Not significant

Figure 5, shows the comparative distribution of FAST Performance in the manic, depressive and remission groups

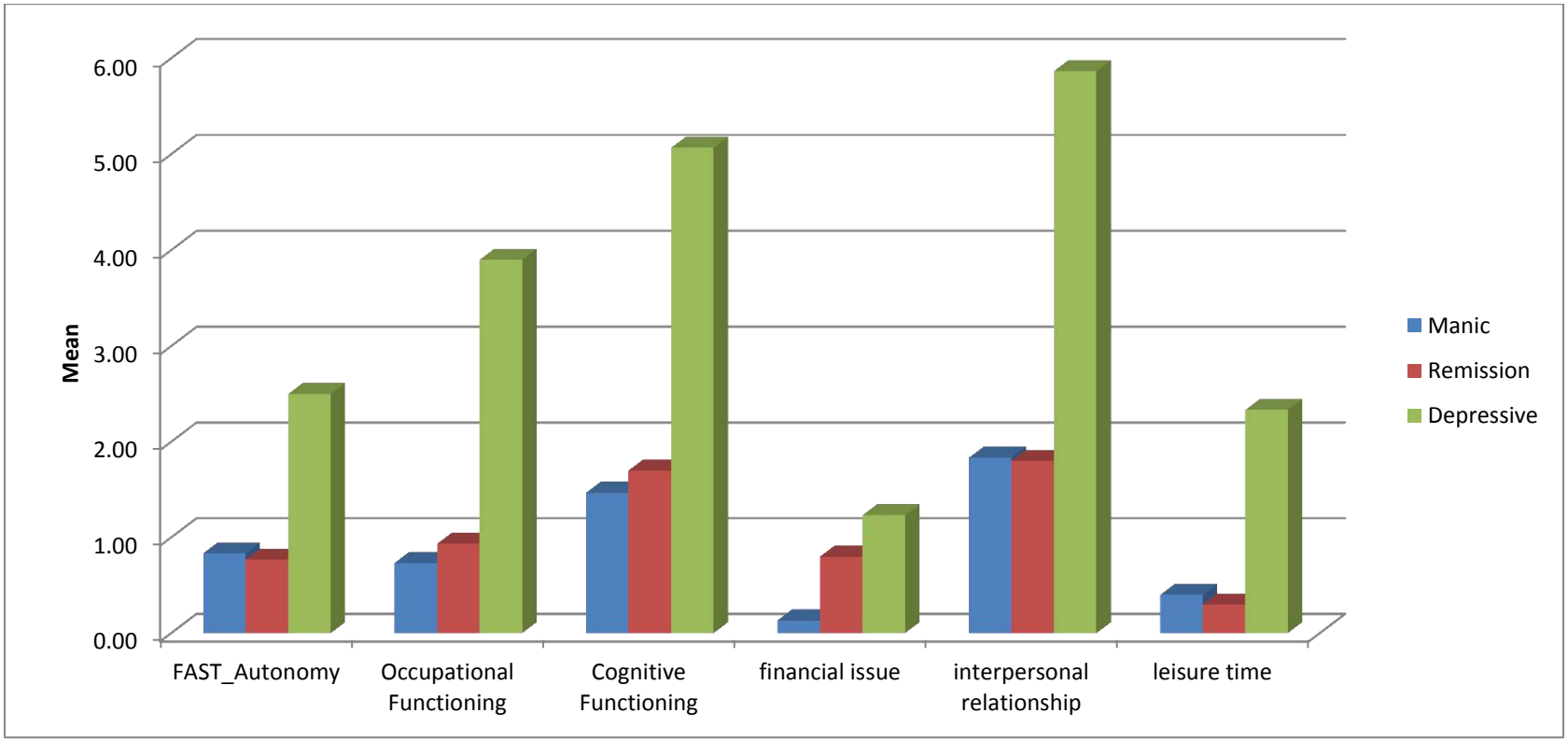


Table 6, shows the comparative distribution of I.P.S.A.Q. negative items Performance in patients in the manic, depressive and remission groups

	Manic		Remission		Depressive		F	df	p-value	1 vs 2	1 vs 3	2 vs 3
	Mean	SD	Mean	SD	Mean	SD				p-value	p-value	p-value
IPSAQ-NEGATIVE-internal	1.87	1.43	3.03	1.63	0.90	1.09	17.403	2	**0.01**	**0.01**	NS (0.05)	**0.01**
IPSAQ-NEGATIVE-external personal	9.70	2.39	8.73	2.08	9.73	4.65	0.915	2	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)
IPSAQ-NEGATIVE-external situational	4.40	2.57	4.20	1.27	5.27	4.69	0.958	2	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)

NS= Not significant

Figure 6, shows the comparative distribution of I.P.S.A.Q. negative items Performance in patients between three groups

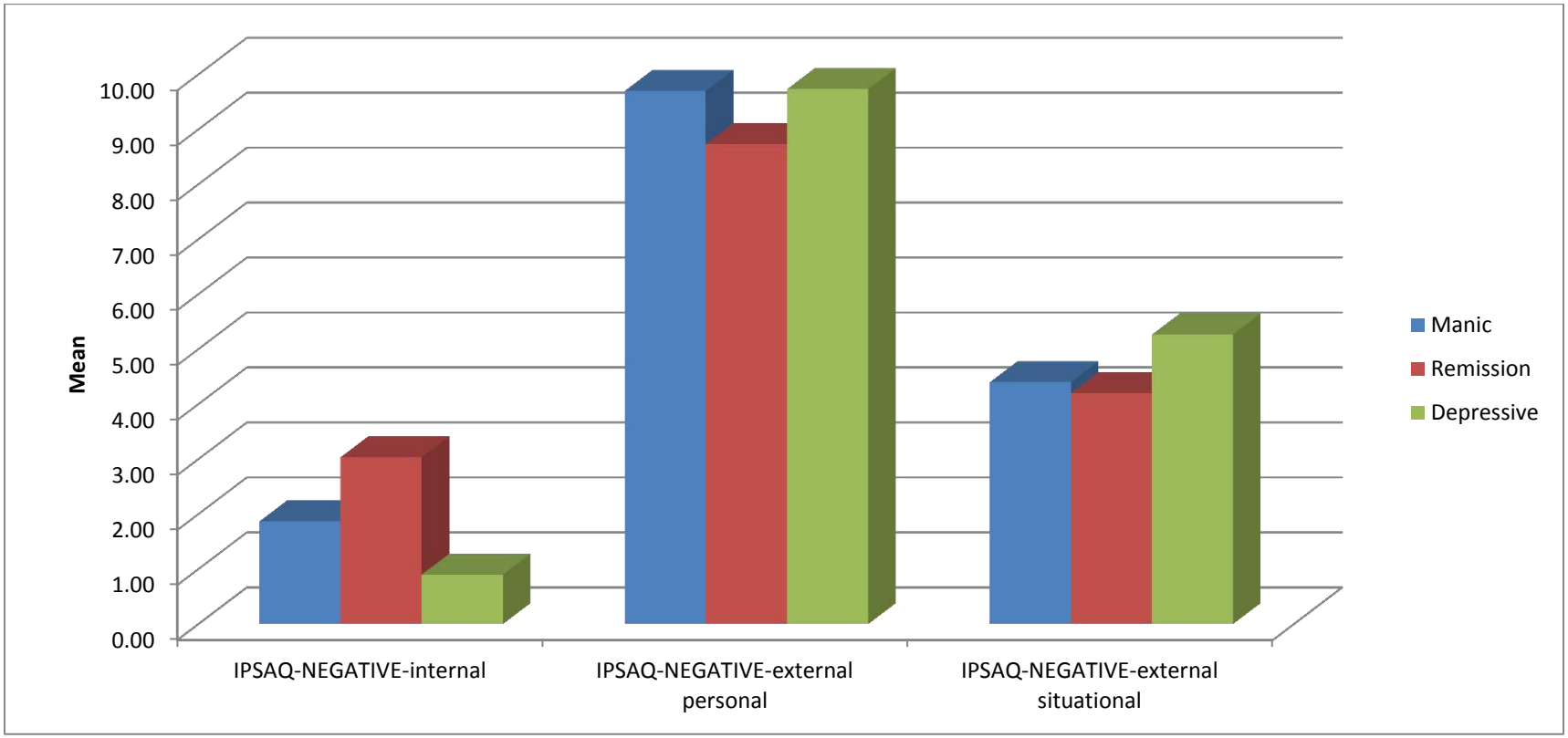


Table 7, shows the comparative distribution of I.P.S.A.Q. positive items Performance in patients in the manic, depressive and remission groups

	Manic		Remission		Depressive		F	df	p-value	1 vs 2	1 vs 3	2 vs 3
	Mean	SD	Mean	SD	Mean	SD				p-value	p-value	p-value
IPSAQ-POSITIVE-internal	5.03	2.72	7.17	2.44	9.27	1.96	23.434	2	**0.01**	**0.01**	**0.01**	**0.01**
IPSAQ-POSITIVE-external personal	7.07	2.39	6.30	2.44	4.27	1.95	12.197	2	**0.01**	NS (0.05)	**0.01**	**0.01**
IPSAQ-POSITIVE-external situational	3.87	1.70	2.53	1.28	2.33	0.71	12.455	2	**0.01**	**0.01**	**0.01**	NS (0.05)

NS= Not significant

Figure 7, shows the comparative distribution of I.P.S.A.Q. positive items mean performance in patients in the manic, depressive and remission groups

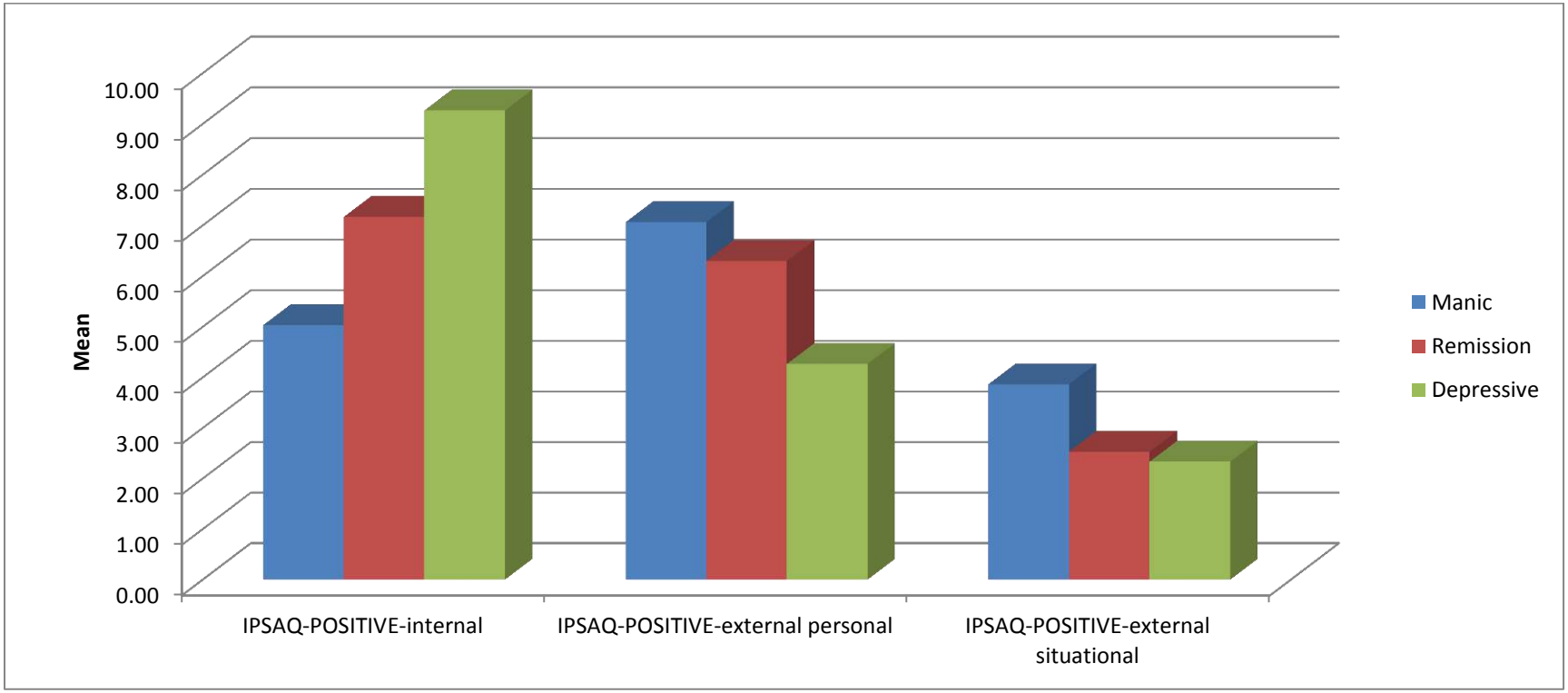


Table 8, shows the comparative distribution of externalizing bias and personalizing bias I.P.S.A.Q. mean performance in patients in the manic, depressive and remission groups

	Manic		Remission		Depressive		F	df	p-value	1 vs 2	1 vs 3	2 vs 3
	Mean	SD	Mean	SD	Mean	SD				p-value	p-value	p-value
IPSAQ-Externalizing bias	3.17	2.51	4.13	3.26	8.37	2.28	31.165	2	**0.01**	NS (0.05)	**0.01**	**0.01**
IPSAQ-personalizing bias	0.69	0.16	0.67	0.10	0.65	0.30	0.290	2	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)

NS= Not significant

Figure 8, shows the comparative distribution of externalizing bias and personalizing bias I.P.S.A.Q. mean Performance in patients in the manic, depressive and remission groups

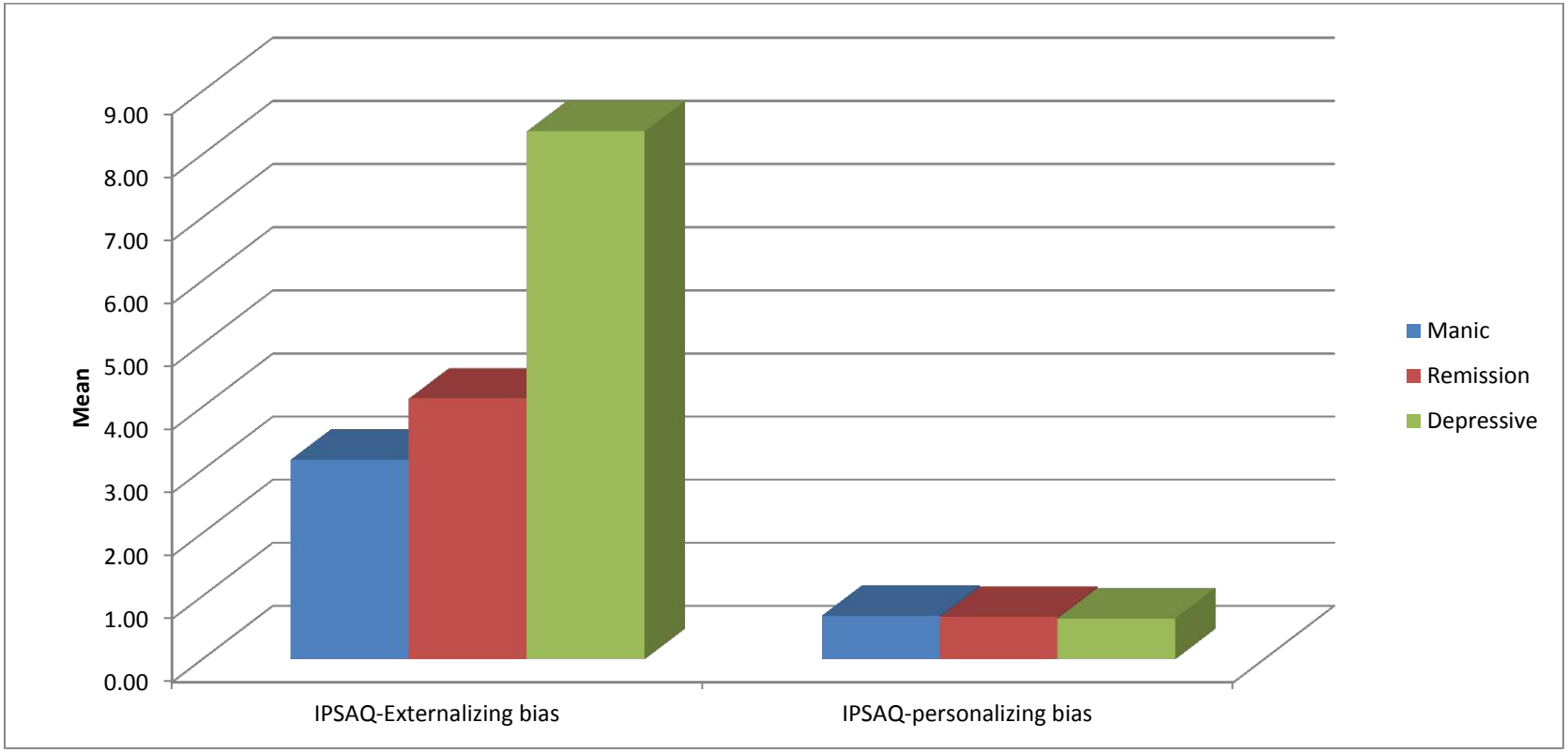


Table 9, shows the comparative distribution of Performance on S.S.I subscales in patients in the manic, depressive and remission groups

SSI	Manic		Remission		Depressive		F	df	p-value	1 vs 2	1 vs 3	2 vs 3
	Mean	SD	Mean	SD	Mean	SD				p-value	p-value	p-value
emotional expressivity	54.63	5.87	45.90	9.96	38.63	10.90	22.875	2	**0.01**	**0.01**	**0.01**	**0.01**
emotional senstivity	50.23	6.32	40.67	13.30	37.37	3.61	17.489	2	**0.01**	**0.01**	**0.01**	NS (0.05)
emotional control	40.20	3.50	38.43	5.53	33.97	11.48	5.323	2	**0.01**	NS (0.05)	**0.01**	NS (0.05)
social expressivity	55.77	8.33	41.47	9.52	31.13	6.28	69.042	2	**0.01**	**0.01**	**0.01**	**0.01**
Social Sensitivity	38.60	7.90	40.17	8.87	41.90	7.73	1.220	2	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)
social control	59.07	4.39	54.93	10.08	44.40	14.38	15.714	2	**0.01**	NS (0.05)	**0.01**	**0.001**
total emotional	145.07	12.41	125.00	21.47	109.97	21.60	25.809	2	**0.01**	**0.01**	**0.01**	**0.01**
total social	153.43	12.31	136.57	13.39	117.43	22.11	35.620	2	**0.01**	**0.01**	**0.01**	**0.01**
expressivity	110.40	13.79	87.37	17.80	69.77	15.32	50.375	2	**0.01**	**0.01**	**0.01**	**0.01**
senstivity	88.83	11.41	80.83	13.21	79.27	9.39	6.031	2	**0.01**	**0.05**	**0.05**	NS (0.05)
control	99.27	5.38	93.37	9.09	78.37	23.53	15.709	2	**0.01**	NS (0.05)	**0.01**	**0.01**

NS= Not significant

Figure 9, shows the comparative distribution of Performance on S.S.I subscales in patients in the manic, depressive and remission groups

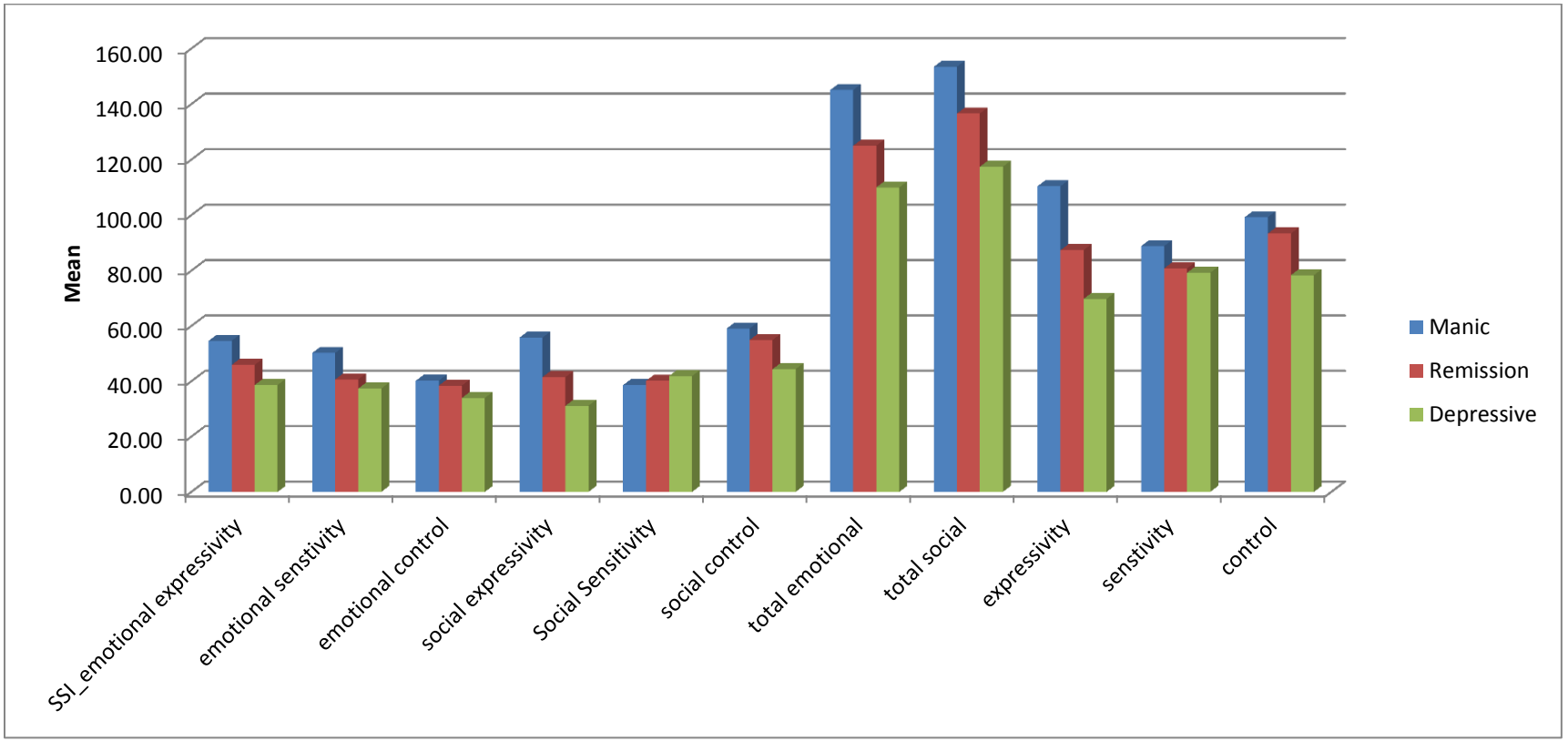


Table 10, shows the comparative distribution of Performance on S.S.I index in patients in the manic, depressive and remission groups

	Manic		Remission		Depressive		F	df	p-value	1 vs 2	1 vs 3	2 vs 3
	Mean	SD	Mean	SD	Mean	SD				p-value	p-value	p-value
TOTAL SSI	298.50	22.42	261.57	29.79	227.40	42.31	35.784	2	**0.01**	**0.01**	**0.01**	**0.01**

Figure 10, shows the comparative distribution of Performance on S.S.I index in patients in the manic, depressive and remission groups

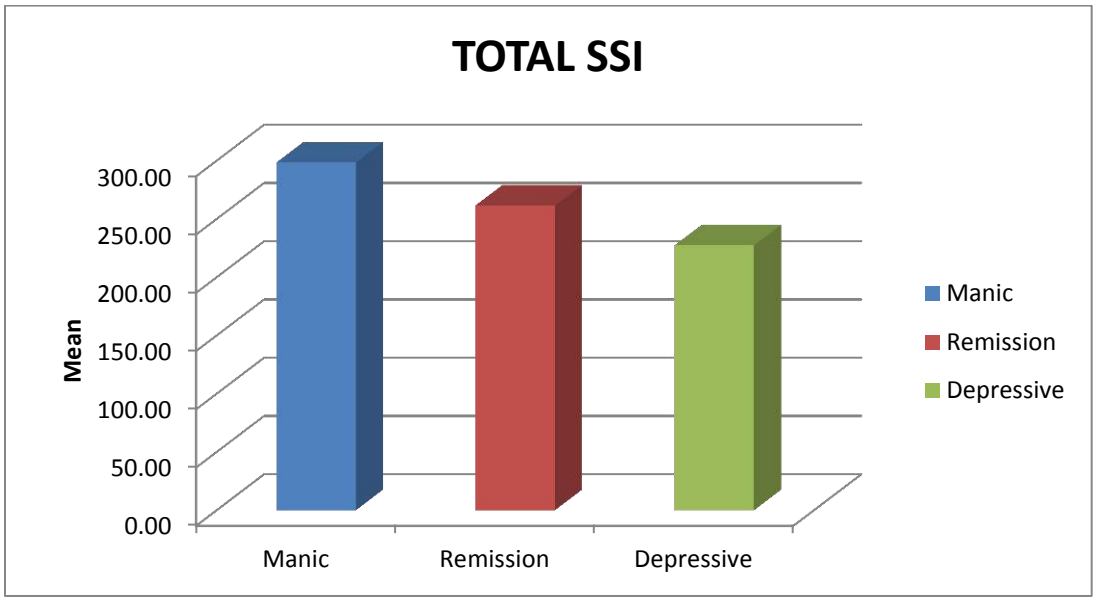


Table 11, shows the relationship between RMET scores and FAST scores in patients in manic phase

FAST	Spearman's rho	RMET
Autonomy	Correlation Coefficient	0.196
	p-value	NS (0.05)
	N	30
Occupational Functioning	Correlation Coefficient	0.093
	p-value	NS (0.05)
	N	30
Cognitive Functioning	Correlation Coefficient	0.395
	p-value	**0.05**
	N	30
financial issue	Correlation Coefficient	-0.342
	p-value	NS (0.05)
interpersonal relationship	Correlation Coefficient	-0.327
	p-value	NS (0.05)
	N	30
leisure time	Correlation Coefficient	0.025
	p-value	NS (0.05)
	N	30

NS= Not significant

Figure 11, shows the relationship between RMET scores and FAST scores in patients in manic phase

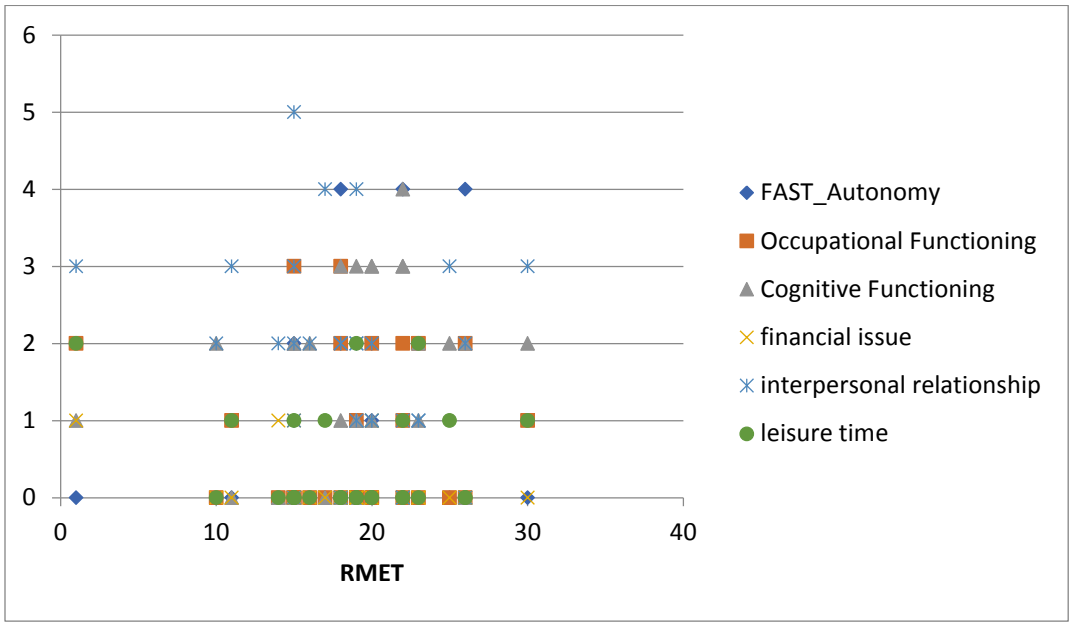


Table 12, shows the relationship between RMET scores and IPSAQ scores in patients in manic phase

Manic	Spearman's rho	IPSAQ-POSITIVE-internal	IPSAQ-POSITIVE-external personal	IPSAQ-POSITIVE-external situational	IPSAQ-NEGATIVE-internal	IPSAQ-NEGATIVE-external personal	IPSAQ-NEGATIVE-external situational	IPSAQ-Externalizing bias	IPSAQ-personalizing bias
RMET	Correlation Coefficient	-0.283	0.324	0.087	-0.203	-0.290	0.373	-0.159	-0.367
	p-value	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	**0.05**	NS (0.05)	**0.05**
	N	30	30	30	30	30	30	30	30

NS= Not significant

Figure 12, shows the relationship between RMET scores and IPSAQ scores in patients in manic phase

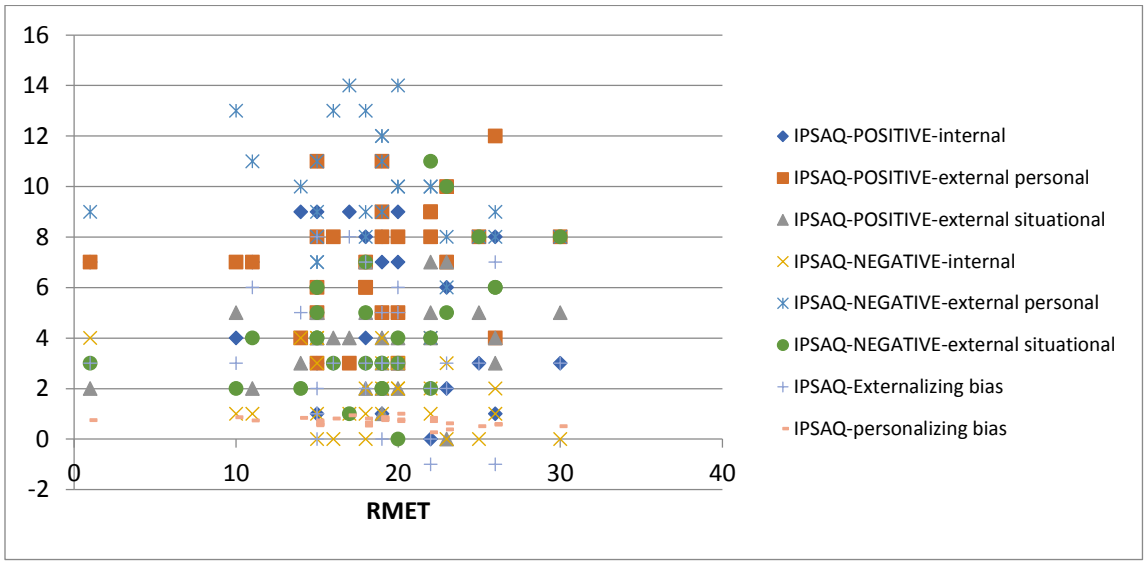


Table 13, shows the relationship between RMET scores and Total SSI score in patients in manic phase

Manic	Spearman's rho	TOTAL SSI
RMET	Correlation Coefficient	-0.168
	p-value	NS (0.05)
	N	30

NS= Not significant

Figure 13, shows the relationship between RMET scores and Total SSI score in patients in manic phase

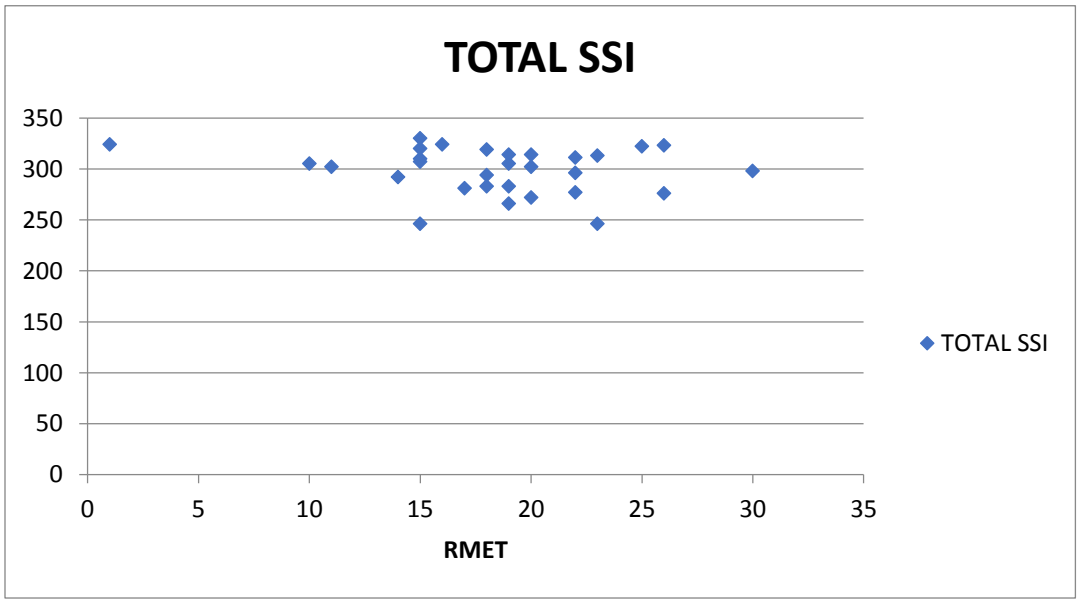


Table 14, shows the relationship between FAST scores and IPSAQ scores in patients in manic phase

		IPSAQ-POSITIVE-internal	IPSAQ-POSITIVE-external personal	IPSAQ-POSITIVE-external situational	IPSAQ-NEGATIVE-internal	IPSAQ-NEGATIVE-external personal	IPSAQ-NEGATIVE-external situational	IPSAQ-Externalizing bias	IPSAQ-personalizing bias
FAST Autonomy	Correlation Coefficient	-0.113	0.255	0.011	0.301	-0.120	0.051	-0.270	-0.081
	p-value	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)
	N	30	30	30	30	30	30	30	30
Occupational Functioning	Correlation Coefficient	-0.015	-0.034	0.057	0.064	-0.363	0.324	-0.096	-0.343
	p-value	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)
	N	30	30	30	30	30	30	30	30
Cognitive Functioning	Correlation Coefficient	-0.564	0.361	0.428	-0.086	-0.022	0.022	-0.522	-0.037
	p-value	**0.01**	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	**0.01**	NS
	N	30	30	30	30	30	30	30	30
financial issue	Correlation Coefficient	0.080	0.057	-0.261	0.162	0.000	-0.080	0.006	0.057
	p-value	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)
	N	30	30	30	30	30	30	30	30
interpersonal relationship	Correlation Coefficient	0.398	-0.375	-0.190	-0.111	0.244	-0.172	0.517	0.188
	p-value	**0.05**	**0.05**	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	**0.01**	NS (0.05)
	N	30	30	30	30	30	30	30	30
leisure time	Correlation Coefficient	0.015	0.206	-0.186	0.071	-0.296	0.197	0.034	-0.235
	p-value	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)
	N	30	30	30	30	30	30	30	30

NS= Not significant

Table 15, shows the relationship between FAST scores and Total SSI scores in patients in manic phase

		FAST Autonomy	Occupational Functioning	Cognitive Functioning	financial issue	interpersonal relationship	leisure time
TOTAL SSI	Correlation Coefficient	0.394	-0.168	-0.488	0.244	-0.011	0.102
	p-value	NS (0.05)	NS (0.05)	**0.01**	NS (0.05)	NS (0.05)	NS (0.05)
	N	30	30	30	30	30	30

NS= Not significant

Figure 14, shows the relationship between FAST scores and Total SSI scores in patients in manic phase

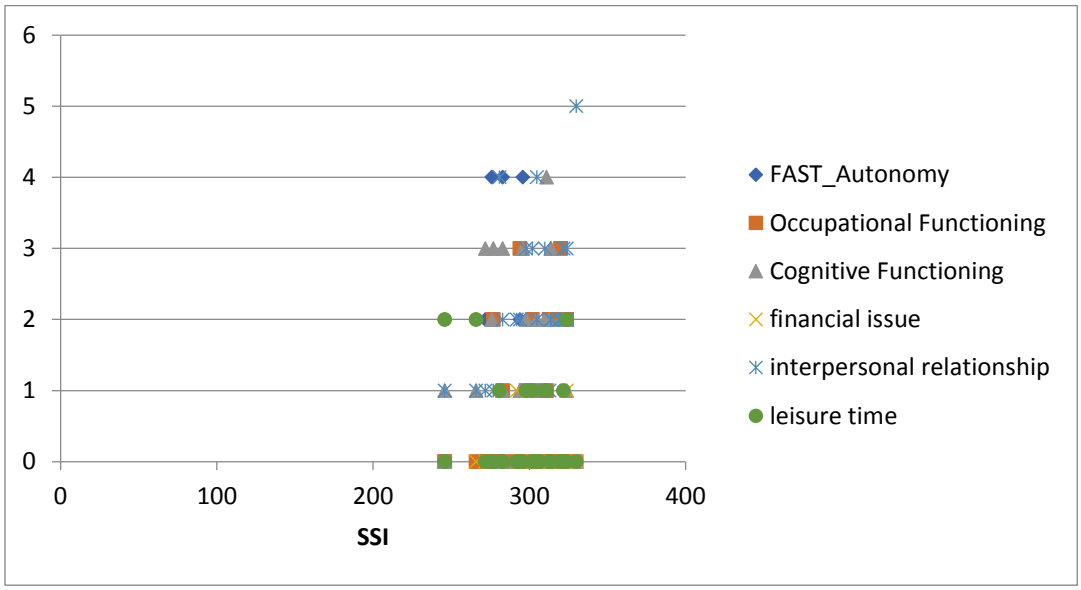


Table 16, shows the relationship between IPSAQ scores and Total SSI scores in patients in manic phase

		IPSAQ-POSITIVE-internal	IPSAQ-POSITIVE-external personal	IPSAQ-POSITIVE-external situational	IPSAQ-NEGATIVE-internal	IPSAQ-NEGATIVE-external personal	IPSAQ-NEGATIVE-external situational	IPSAQ-Externalizing bias	IPSAQ-personalizing bias
TOTAL SSI	Correlation Coefficient	-0.081	-0.118	0.133	-0.394	-0.031	0.248	0.125	-0.208
	p-value	NS (0.05)	NS (0.05)	NS (0.05)	**0.05**	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)
	N	30	30	30	30	30	30	30	30

NS= Not significant

Figure 15, shows the relationship between IPSAQ scores and Total SSI scores in patients in manic phase

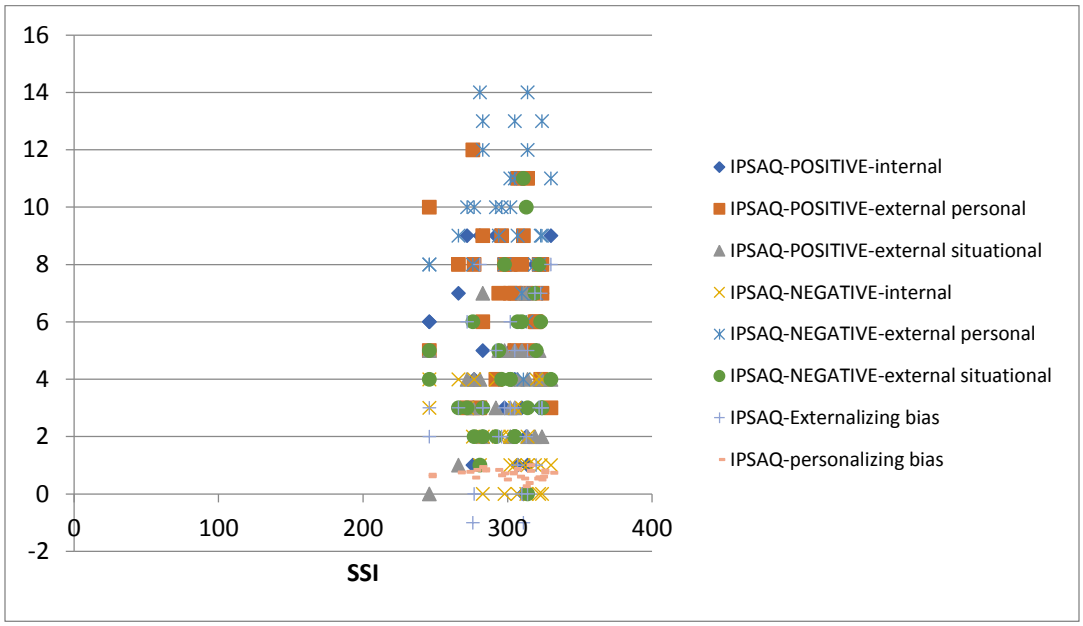


Table 17, shows the relationship between RMET scores and FAST scores in patients in remission phase

		FAST Autonomy	Occupational Functioning	Cognitive Functioning	financial issue	interpersonal relationship	leisure time
RMET	Correlation Coefficient	0.006	0.024	0.134	0.081	0.031	0.473
	p-value	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	**0.01**
	N	30	30	30	30	30	30

NS= Not significant

Figure 16, shows the relationship between RMET scores and FAST scores in patients in remission phase

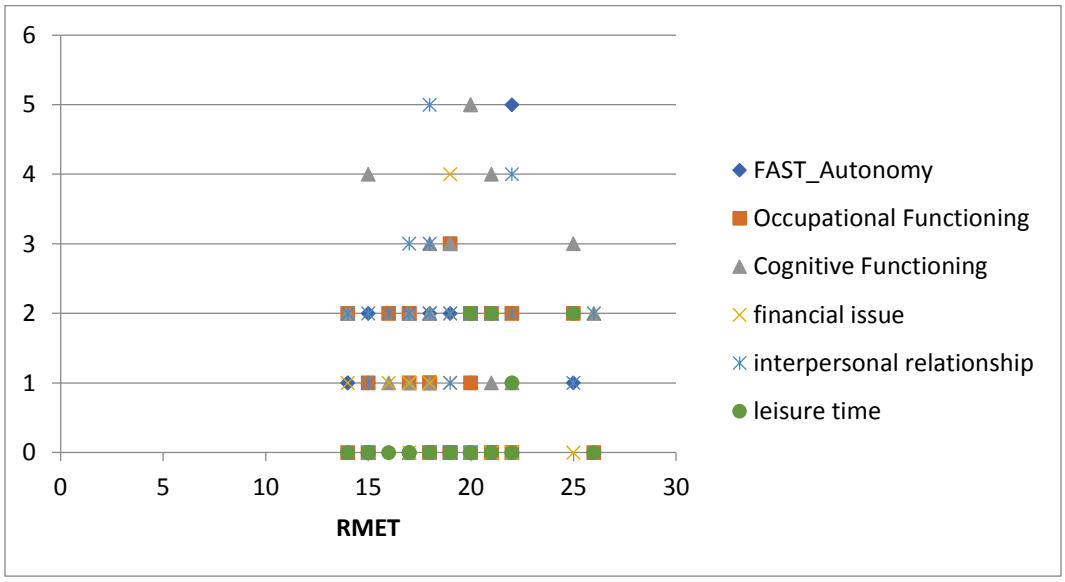


Table 18, shows the relationship between RMET scores and IPSAQ scores in patients in remission phase

	Spearman's rho	IPSAQ-POSITIVE-internal	IPSAQ-POSITIVE-external personal	IPSAQ-POSITIVE-external situational	IPSAQ-NEGATIVE-internal	IPSAQ-NEGATIVE-external personal	IPSAQ-NEGATIVE-external situational	IPSAQ-Externalizing bias	IPSAQ-personalizing bias
RMET	Correlation Coefficient	-0.160	0.081	0.168	-0.253	0.168	-0.009	0.028	0.096
	p-value	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)
	N	30	30	30	30	30	30	30	30

NS= Not significant

Figure 17, shows the relationship between RMET scores and IPSAQ scores in patients in remission phase

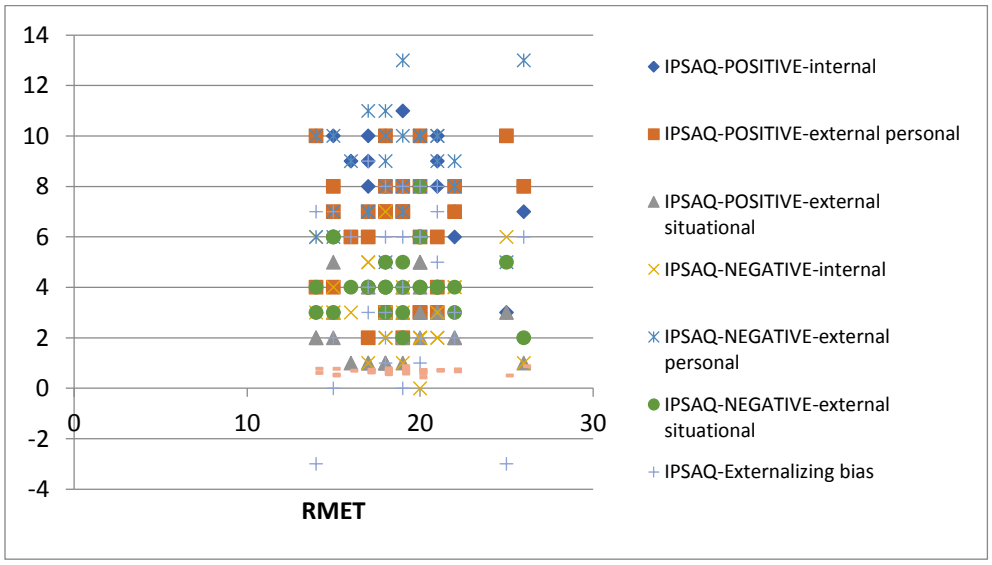


Table 19, shows the relationship between RMET scores and Total SSI score in patients in remission phase

		RMET
TOTAL SSI	Correlation Coefficient	0.036
	p-value	NS (0.05)
	N	30

NS= Not significant

Figure 18, shows the relationship between RMET scores and Total SSI score in patients in remission phase

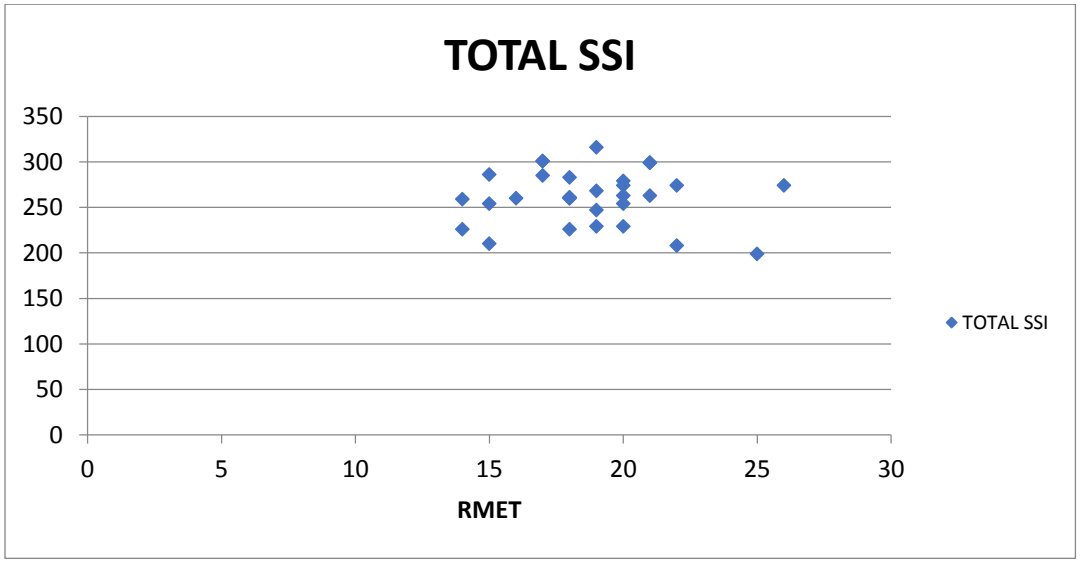


Table 20, shows the relationship between FAST scores and IPSAQ scores in patients in remission phase

FAST		IPSAQ-POSITIVE-internal	IPSAQ-POSITIVE-external personal	IPSAQ-POSITIVE-external situational	IPSAQ-NEGATIVE-internal	IPSAQ-NEGATIVE-external personal	IPSAQ-NEGATIVE-external situational	IPSAQ-Externalizing bias	IPSAQ-personalizing bias
Autonomy	Correlation Coefficient	-0.113	0.139	0.088	0.076	-0.060	0.019	-0.111	-0.013
	p-value	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)
	N	30	30	30	30	30	30	30	30
Occupational Functioning	Correlation Coefficient	0.203	-0.247	0.124	-0.021	-0.078	0.195	0.164	-0.101
	p-value	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)
	N	30	30	30	30	30	30	30	30
Cognitive Functioning	Correlation Coefficient	-0.229	0.266	0.035	-0.104	0.165	-0.170	-0.138	0.190
	p-value	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)
	N	30	30	30	30	30	30	30	30
financial issue	Correlation Coefficient	-0.029	0.060	-0.215	-0.015	-0.028	-0.112	0.005	0.021
	p-value	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)
	N	30	30	30	30	30	30	30	30
interpersonal relationship	Correlation Coefficient	0.226	-0.189	-0.141	-0.168	0.126	-0.021	0.292	0.108
	p-value	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)
	N	30	30	30	30	30	30	30	30
leisure time	Correlation Coefficient	-0.399	0.338	0.231	0.085	-0.011	-0.021	-0.359	0.039
	p-value	**0.05**	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)	NS(0.05)
	N	30	30	30	30	30	30	30	30

NS= Not significant

Table 21, shows the relationship between FAST scores and total SSI score in patients in remission phase

		FAST Autonomy	Occupational Functioning	Cognitive Functioning	financial issue	interpersonal relationship	leisure time
TOTAL SSI	Correlation Coefficient	-0.619	0.059	-0.375	-0.037	-0.012	-0.189
	p-value	**0.01**	NS (0.05)	**0.05**	NS (0.05)	NS (0.05)	NS (0.05)
	N	30	30	30	30	30	30

NS= Not significant

Figure 19, shows the relationship between FAST scores and total SSI score in patients in remission phase

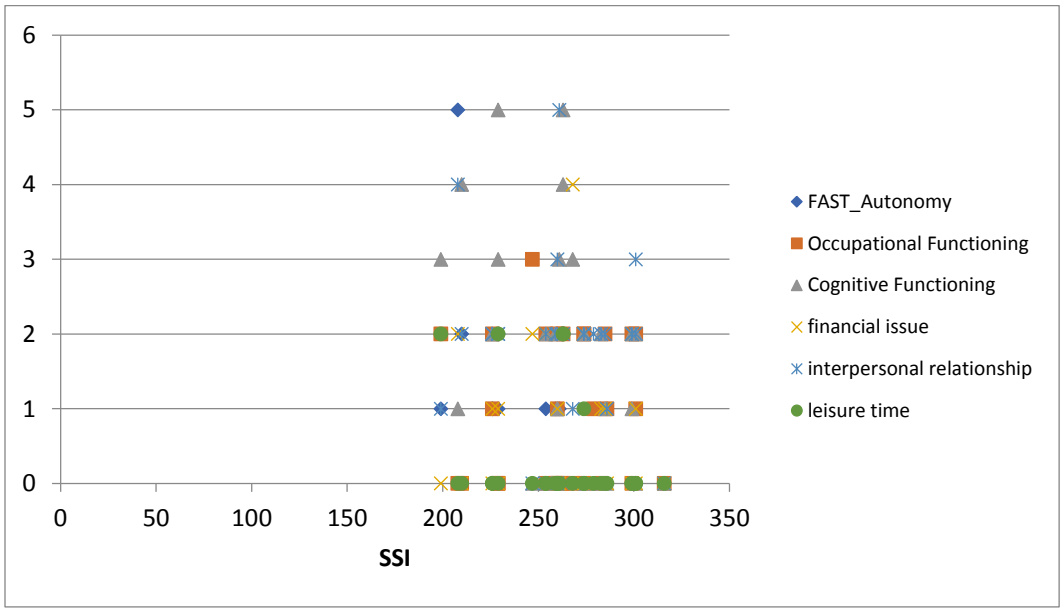


Table 22, shows the relationship between IPSAQ scores and Total SSI scores in patients in remission phase

		IPSAQ-POSITIVE-internal	IPSAQ-POSITIVE-external personal	IPSAQ-POSITIVE-external situational	IPSAQ-NEGATIVE-internal	IPSAQ-NEGATIVE-external personal	IPSAQ-NEGATIVE-external situational	IPSAQ-Externalizing bias	IPSAQ-personalizing bias
TOTAL SSI	Correlation Coefficient	-0.081	-0.118	0.133	-0.394	-0.031	0.248	0.125	-0.208
	p-value	NS (0.05)	NS (0.05)	NS (0.05)	**0.05**	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)
	N	30	30	30	30	30	30	30	30

NS= Not significant

Figure 20, shows the relationship between IPSAQ scores and Total SSI scores in patients in remission phase

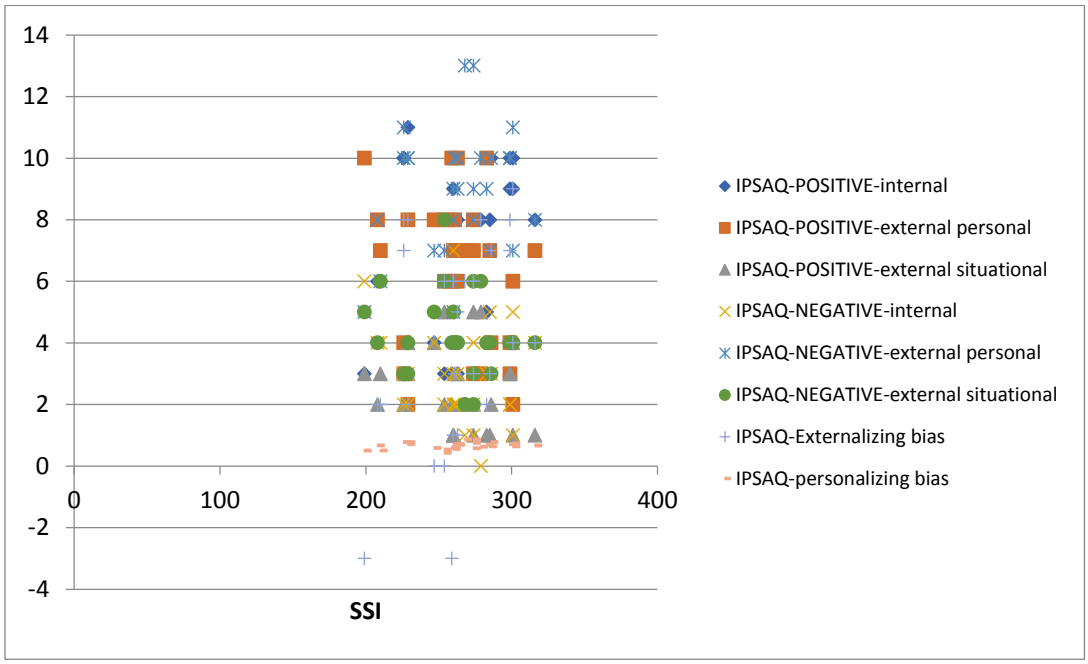


Table 23, shows the relationship between RMET scores and FAST scores in patients in depressive phase

		FAST Autonomy	Occupational Functioning	Cognitive Functioning	financial issue	interpersonal relationship	leisure time
RMET	Correlation Coefficient	0.309	0.014	0.022	0.231	-0.332	0.049
	p-value	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)
	N	30	30	30	30	30	30

NS= Not significant

Figure 21, shows the relationship between RMET scores and FAST scores in patients in depressive phase

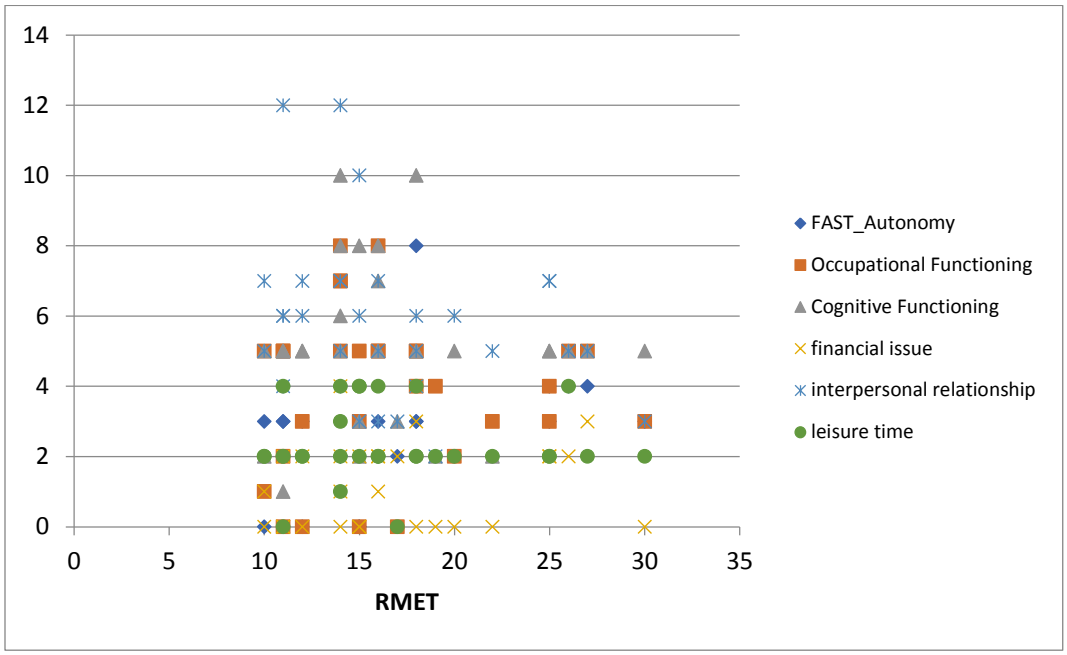


Table 24, shows the relationship between RMET scores and IPSAQ scores in patients in depressive phase

	Spearman's rho	IPSAQ-POSITIVE-internal	IPSAQ-POSITIVE-external personal	IPSAQ-POSITIVE-external situational	IPSAQ-NEGATIVE-internal	IPSAQ-NEGATIVE-external personal	IPSAQ-NEGATIVE-external situational	IPSAQ-Externalizing bias	IPSAQ-personalizing bias
RMET	Correlation Coefficient	0.495	-0.445	0.092	-0.214	-0.177	0.186	0.440	-0.143
	p-value	**0.01**	**0.05**	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	**0.05**	NS (0.05)
	N	30	30	30	30	30	30	30	30

NS= Not significant

Figure 22, shows the relationship between RMET scores and IPSAQ scores in patients in depressive phase

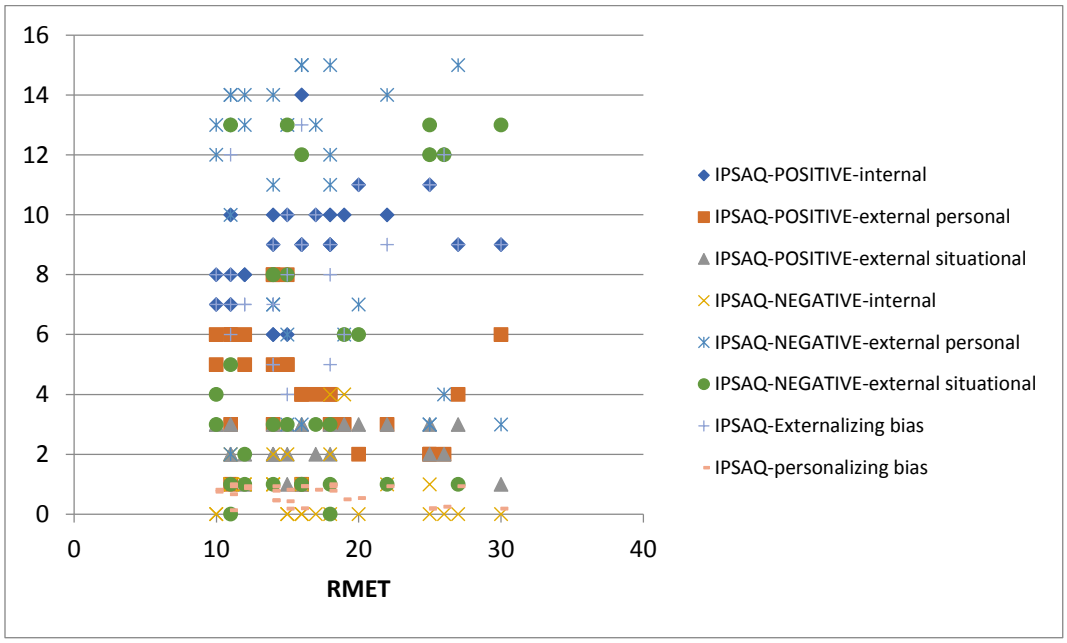


Table 25, shows the relationship between RMET scores and Total SSI scores in patients in depressive phase

		RMET
TOTAL SSI	Correlation Coefficient	0.488
	p-value	**0.01**
	N	30

Figure 23, shows the relationship between RMET scores and Total SSI scores in patients in depressive phase

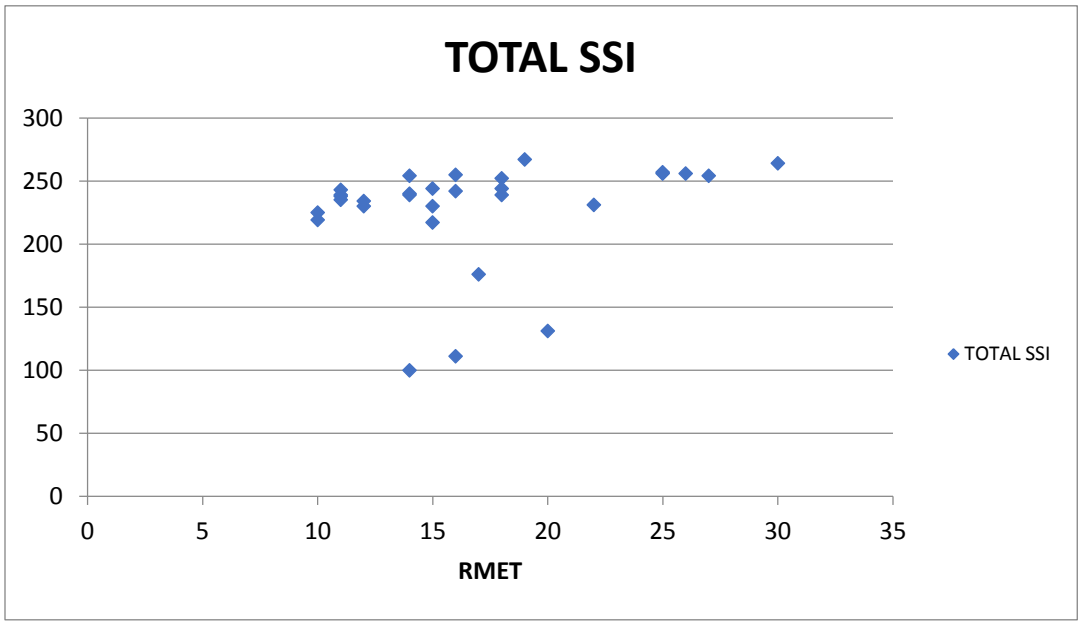


Table 26, shows the relationship between FAST scores and IPSAQ scores in patients in depressive phase

FAST		IPSAQ-POSITIVE-internal	IPSAQ-POSITIVE-external personal	IPSAQ-POSITIVE-external situational	IPSAQ-NEGATIVE-internal	IPSAQ-NEGATIVE-external personal	IPSAQ-NEGATIVE-external situational	IPSAQ-Externalizing bias	IPSAQ-personalizing bias
Autonomy	Correlation Coefficient	0.279	-0.320	0.155	-0.001	-0.097	0.015	0.196	0.039
	p-value	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)
	N	30	30	30	30	30	30	30	30
Occupational Functioning	Correlation Coefficient	-0.181	0.066	0.182	0.264	0.234	-0.265	-0.275	0.258
	p-value	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)
	N	30	30	30	30	30	30	30	30
Cognitive Functioning	Correlation Coefficient	-0.265	0.189	-0.045	0.246	0.106	-0.180	-0.287	0.189
	p-value	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)
	N	30	30	30	30	30	30	30	30
financial issue	Correlation Coefficient	0.042	-0.126	0.162	0.038	0.165	-0.212	0.030	0.264
	p-value	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)
	N	30	30	30	30	30	30	30	30
interpersonal relationship	Correlation Coefficient	-0.189	0.093	0.000	0.170	-0.029	0.034	-0.139	-0.082
	p-value	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)
	N	30	30	30	30	30	30	30	30
leisure time	Correlation Coefficient	0.120	-0.123	0.004	0.083	-0.175	0.100	0.060	-0.107
	p-value	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)
	N	30	30	30	30	30	30	30	30

NS= Not significant

Table 27, shows the relationship between FAST scores and Total SSI scores in patients in depressive phase

		FAST Autonomy	Occupational Functioning	Cognitive Functioning	financial issue	interpersonal relationship	leisure time
TOTAL SSI	Correlation Coefficient	0.455	0.059	-0.070	0.197	-0.340	-0.070
	p-value	**0.05**	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)
	N	30	30	30	30	30	30

NS= Not significant

Figure 24, shows the relationship between FAST scores and Total SSI scores in patients in depressive phase

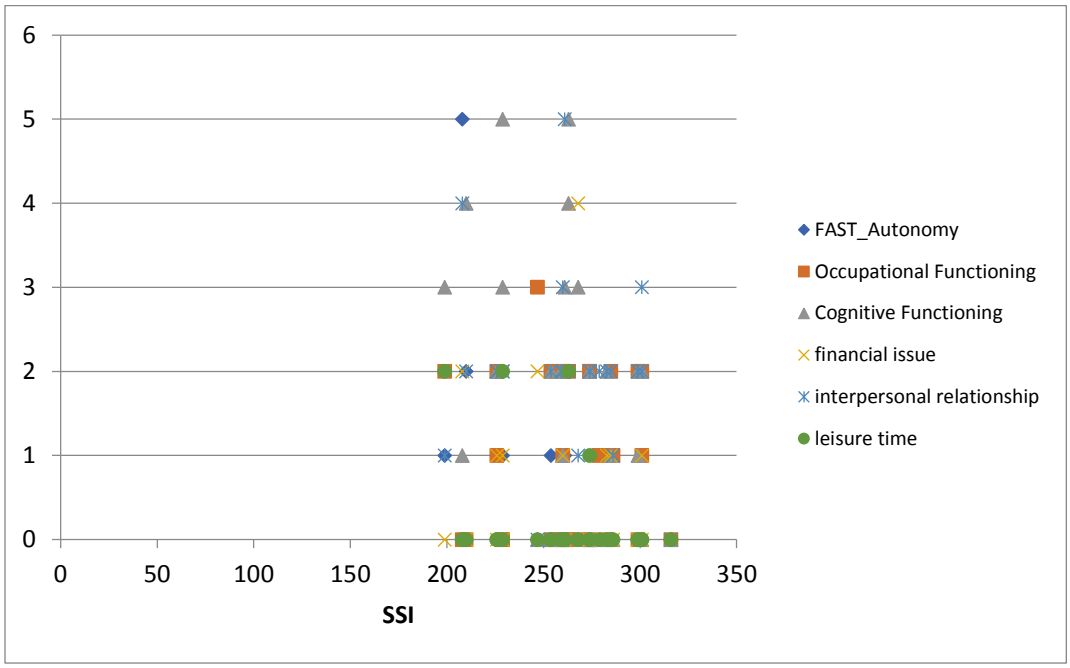
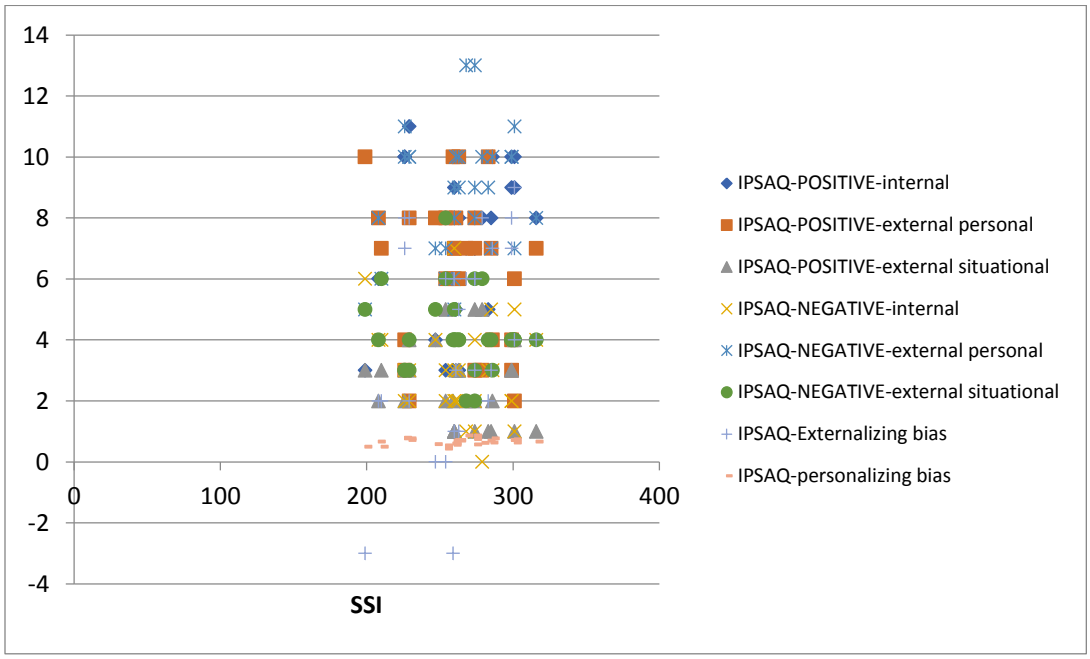


Table 28, shows the relationship between IPSAQ scores and Total SSI scores in patients in depressive phase

		IPSAQ-POSITIVE-internal	IPSAQ-POSITIVE-external personal	IPSAQ-POSITIVE-external situational	IPSAQ-NEGATIVE-internal	IPSAQ-NEGATIVE-external personal	IPSAQ-NEGATIVE-external situational	IPSAQ-Externalizing bias	IPSAQ-personalizing bias
TOTAL SSI	Correlation Coefficient	0.352	-0.242	-0.285	0.167	-0.453	0.392	0.172	-0.380
	p-value	NS (0.05)	NS (0.05)	NS (0.05)	NS (0.05)	**0.05**	**0.05**	NS (0.05)	**0.05**
	N	30	30	30	30	30	30	30	30

NS= Not significant

Figure 25, shows the relationship between IPSAQ scores and Total SSI scores in patients in depressive phase



RESULTS

The present study was conducted with an aim to explore social cognition, social skills and functional outcome in BD I patients. In order to fulfil our aim, the study was conducted on a total of 90 subjects (30 in manic phase, 30 in depressive phase and 30 in remission phase) between the age range 18 to 60 years. The participants were selected from the inpatient and outpatient department of Psychiatry of Dayanand Medical College & Hospital, Ludhiana. Purposive sampling method was used for the selection of the participants. All the participants were evaluated using HDRS, YMRS, RMET, I.P.S.A.Q and SSI inventory. The data thus collected was tabulated and after analyzing the following results were obtained.

The Table 1 and figure 1, shows the distribution of different age group between age group between manic, depressive and remission groups. The maximum number of patients are found in the age in age group of 31-50 years (48%) followed by the age group > 50 years of age (29%) and lastly < 30 (23%)

The Table 2 and figure 2, shows the gender-wise distribution of the cases between the manic, depressive and remission groups. The picture is dominated by male patients. 78% of the patients were males and 22% were females.

The table 3 and figure 3, shows the distribution of background of the cases the manic, depressive and remission groups. In our study 59% of the patients belong to the urban background and 41% from the rural background.

The table 4 and figure 4, shows the comparative distribution of RMET Performance in patients manic, depressive and remission groups. The

mean performance score of depressive, manic and remission group was 16.73, 18.43 and 18.80 respectively which shows no significant difference.

The table 5 and figure 5, shows the comparative distribution of FAST scale performance in patients in the manic, depressive and remission groups. The mean performance score of the depressive group for the 6 domains was 2.50, 3.90, 5.07,1.23, 5.87 and 2.33 for the manic group. The mean performance score was 0.83,0.73,1.47, 0.13, 1.83 and 0.40. The mean performance score of the depressive group for the 6 domains was 0.77,0.93, 1.70, 0.80, 1.80 and 1.30 respectively. The variance is significant with p- value 0.01 for the manic and depressive for all the 6 domains. For the manic and depressive group, the mean is significant only for financial issue domain with p- value 0.01. significant difference is found between the manic and depressive group for 5/6 domains.

The table 6 and figure 6, shows the comparative distribution of I.P.S.A.Q. negative items Performance in patients in the manic, depressive and remission groups. Findings indicate a significant difference between the mean of manic (1.87) and remission (3.03) group and remission (3.03) and depressive (0.90) group on IPSAQ negative internal items with p- value 0.01.

The table 7 and figure 7, shows the comparative distribution of I.P.S.A.Q. positive items Performance in patients in the manic, depressive and remission groups. Findings indicate a significant difference between the mean of manic (5.03) and depressive (9.27) group, manic (5.03) and remission (7.17) group and remission (7.17) and depressive (9.27) group on IPSAQ positive internal items with p- value 0.01.
For IPSAQ-POSITIVE-external situational items significant difference was found between the mean of manic (3.87) and depressive (2.33) group, manic (3.87) and remission (2.53) group with p- value 0.01

On IPSAQ-POSITIVE-external personal significant difference was found between the mean of manic (7.07) and depressive (4.27) group, remission (6.30) and depressive (4.27) group with p- value 0.01

The table 8 and figure 8, shows the comparative distribution of externalizing bias and personalizing bias I.P.S.A.Q. performance scores in the manic, depressive and remission groups.
No significant difference was observed between the mean of three groups for personalizing bias. Significant difference was found in the mean for externalizing bias between mean of manic (3.17) and depressive (8.37) group, remission (4.13) and depressive (8.37) group with p- value 0.01

The table 9 and figure 9, we have discussed the different domains of SSI as observed by patients in three groups and found a significant p value. The maximum difference of mean of all domains except social sensitivity was found in manic group as compared with the other groups. The mean of manic group for the 6 different scales namely emotional expressivity, emotional sensitivity, emotional control, social expressivity, social sensitivity and social control was 54.6, 50.23, 40.20, 55.77, 38.6 and 59.07 respectively. The mean of remission group for the 6 different scales was 45.9, 40.67, 38.43, 41.47, 40.17 and 54.93. the mean of the depressive group for the above-mentioned scales was 38.6, 37.3, 33.97, 31.13, 41.9 and 44.4 respectively.

The Table 10 and figure 10, shows the comparative distribution of performance on S.S.I index in patients in the manic, depressive and remission groups. Findings indicate a significant difference between the mean of manic (298.50) and depressive (227.40) group, manic (298.50) and remission (261.57) group and remission (261.57) and depressive (227.40) group on total SSI score with p- value 0.01.

The Table 11 and figure 11, shows the relationship between RMET scores and FAST scores in patients in manic phase. Pearson's correlation value of 0.395 was found for cognitive functioning domain of FAST and RMET.

The Table 12 and figure 12, shows the relationship between RMET scores and IPSAQ scores in patients in manic phase. Pearson's correlation value of 0.373 and -0.367 was found for IPSAQ-NEGATIVE-external situational and personalizing bias with RMET respectively.

The table 13 and figure 13, correlates the relationship between RMET scores and Total SSI score in patients in manic phase. We found no significant correlation was found between the two.

The table 14, correlates the relationship between FAST scores and IPSAQ scores in patients in manic phase. FAST domain Cognitive Functioning had a negative correlation with IPSAQ-POSITIVE-internal (-0.564), and IPSAQ-Externalizing bias (-0.522). interpersonal relationships had correlation with IPSAQ-POSITIVE-internal (0.398), IPSAQ-POSITIVE external personal (-0.375) and IPSAQ-Externalizing bias (0.517).

The table 15 and figure 14 shows the relationship between FAST scores and Total SSI scores in patients in manic phase. The findings indicate Pearson's correlation value of -0.488 for the cognitive functioning domain of FAST with total SSI score.

The table 16 and figure 15, correlates the relationship between IPSAQ scale and Total SSI score in patients in manic phase. Pearson's correlation value of -0.394 was found for IPSAQ-NEGATIVE-internal items and Total SSI score.

The table 17 and figure 16, shows the relationship between RMET scores and FAST scores in remission phase. Pearson's correlation value 0.473 was found between FAST leisure time and RMET scores.

The table 18 and figure 17, correlates the relationship between RMET scale and IPSAQ scale in patients in remission phase. No significant correlation was found between the two scales.

The table 19 and figure 18, correlates the relationship between RMET scores and Total SSI score in patients in remission phase. We found no significant correlation was found between the two.

The table 20, shows the relationship between FAST scores and IPSAQ scores in patients in remission phase. Pearson's correlation value -0.399 was found between FAST leisure time and IPSAQ-POSITIVE internal.

The Table 21 and figure 19, shows the relationship between FAST scores and total SSI score in patients in remission phase. Pearson's correlation value of -0.619 and -0.375 was found between the FAST domains autonomy and cognitive functioning respectively with SSI index.

The Table 22 and figure 20, correlates the relationship between IPSAQ scores and Total SSI scores in patients in remission phase Pearson's correlation value of (-0.394) was found for IPSAQ-NEGATIVE-internal items and total SSI score.

The Table 23 and figure 21, shows the relationship between RMET scores and FAST scores in patients in depressive phase. No significant relationship was found between the two scales.

The Table 24 and figure 22, shows the relationship between RMET scores and IPSAQ scores in patients in depressive phase. Pearson's correlation value of 0.495, -0.445 and 0.440 was found for IPSAQ-POSITIVE-internal, IPSAQ-POSITIVE-external personal and Externalizing bias with RMET

The Table 25 and figure 23, correlates the relationship between RMET scores and Total SSI scores in patients in depressive phase. Pearson's correlation value of 0.488 was found between both the scales.

The Table 26 and figure 24, shows the relationship between FAST scores and IPSAQ scores in patients in depressive phase. No significant relationship was between both the scales.

The Table 27, we have correlated the relationship between FAST scale and Total SSI score in patients in depressive phase. Pearson's correlation value of 0.455 was found for the autonomy domain and the SSI score.

The Table 28 and figure 25, shows the relationship between IPSAQ scale and Total SSI score in patients in depressive phase Pearson's correlation value of -0.453, 0.392 and -0.380 was found for IPSAQ-NEGATIVE-external personal, IPSAQ-NEGATIVE-external situational and personalizing bias respectively with Total SSI score.

DISCUSSION

The present investigation was conducted with the aim to study the social cognition domains, theory of mind and attribution style, social skills and functioning in the patients with bipolar I disorder. For the purpose of this study bipolar I patients in three phases of illness i.e., manic, depressive and remission were recruited. A total number of 90 patients (30 in each group) fulfilling the laid down inclusion and exclusion criteria were recruited and assessed with the help of HDRS, YMRS, RMET, I.P.S.A.Q and SSI inventory. Diagnosis of the study population was made according to the diagnostic criteria of DSM-5. Patients fulfilling the criteria for Bipolar I were selected. The data was then analyzed and following conclusions were reached.

SOCIODEMOGRAPHIC CORRELATES

AGE

With regards to age, majority of patients were seen in age group of 31-50 years (48%) followed by age group between > 50 years of age (29%). The mean age of patients in manic, depressive and remission group was 39.83, 40.07 & 43.07 years respectively in our study.

BACKGROUND

In our study 59% of the patients were from urban background and 41% of the patients from rural background. Since the present study was conducted in a tertiary care hospital, which caters largely to the urban population, the pre-ponderance of more subjects from urban locality is understandable.

GENDER

In our study 78% of the patients were males and 22% were females. Similar gender trends have been found in the study conducted by Inoue et al. 2004[81] where majority of the participants were male (28 male and 22

female). Also, most of the hospital-based Indian studies conducted on BD found that the male patients outnumbered female patients [113] .

THEORY OF MIND:

The first objective of the present study was to evaluate and compare theory of mind across different phases of bipolar disorder. No significant difference was found between the performance of the patients in manic, depression and remission group. The mean performance score of the patients in manic, depression and remission group were 18.43, 16.73 and 18.80 respectively. The mean performance score of all the three groups was below the mean performance scores of healthy controls on the test indicating a deficit in the ToM performance (baren). Our findings correlate with the findings of the study of Kerr et al.,2003[56]; inoue et. al, 2014[81]; Bora et.al, 2015[85] as described. In the present study ToM impairment was also found in the performance of the remitted group. In a study conducted by Espinós et al. 2019[114] impaired judgement on ToM tasks were found in the BD I patients. Impairment in theory of mind suggests that BD patients, irrespective of the phase of illness have difficulty in inferring the non-verbal cues of others. This emotional disturbance may contribute to the maintenance of maladaptive behaviors in this disorder.

ATTRIBUTIONAL STYLE:

The second objective of the study was to evaluate and compare attributional style across different phases of bipolar disorder.

We found a significant difference in the mean externalizing bias score of manic and depressive group which was 3.17 and 8.37 respectively. No significant difference was found in the mean externalizing bias score of manic and depressive group. Significant difference was also found in the mean externalizing bias score of depressive and remission group which was 8.37 and 4.13 respectively. High externalizing bias score indicates strong self-serving bias in the BD patients.

Significant difference was also found between all the three groups for negative internal attributions. The mean score of the manic, depressive and remission groups was 1.87, 0.90 and 3.03 respectively. This indicates a tendency to attribute negative events to self in all the three groups which is supported by the findings of Lyon et al. (1999)[87].

FUNCTIONAL OUTCOME:

The third objective of the present investigation was to evaluate and compare functional outcome across the phases of bipolar disorder.

In the present study, FAST was used to measure the functioning in the BD patients. Significant difference was found between the performance of the manic and depressive group on all the 6 domains of the FAST scale. Significant difference was found between manic and remission group only on the financial issue domain. Depressive and remission groups also had significant impairment on 5/6 domains of FAST namely, autonomy, occupational functioning, cognitive functioning, interpersonal relationships and leisure time. This indicates that the impairment in functioning is also present in the remission phase as indicated in a review conducted by MacQueen, Young and Joffe (2001)[92]. The findings also indicated that the impairment in functioning was highest in depressive group, followed by manic group and then the remission group which is supported by the study of Rosa et.al 2010[95] and Mehta et. al 2014[98].

High functional impairment in the symptomatic group indicates that both the depressed and the manic mood symptoms have a significant impact on the occupational, social and the cognitive functioning of the individual. This is supported by the study of Depp et al. 2010[102]. Factors associated with functional impairment may include presence of inter-episode symptoms, neuroleptic treatment, lower social economic class, absence of social support and lower premorbid function[115]. Impairment in functioning

in the bipolar patients will impact their effective adjustment in society thereby affecting the psychological health of these patients.

SOCIAL SKILLS:

The fourth objective was to evaluate and compare social skills across the phases of bipolar disorder.

We found significant difference between the total SSI performance score of all the three groups. The mean SSI score of the depressive group was 227.40, manic group was 298.50 and the score of the remission group was 261.57. The low mean score of the depressive and remission group indicates social skill deficits in these groups which is in tune with the findings of Goldstein et al. (2006)[99]. In a study conducted by Cole and Milstead (1989)[116], the findings indicated that social skills deficit were present in depressed individual.

In social situations, the ability to accurately infer the emotions of others, to identify and anticipate their reactions and intentions is extremely important, as it is indicative of their inner thoughts and feelings. Depression affects the social support system of patients. As a result, patients would face more stress, increasing their burden. It might also prolong their recovery time and aggravate their symptoms.

On the different domains of the SSI inventory, significant difference was found between the three groups on emotional expressivity scale. The manic group had a higher mean score on emotional expressivity indicating their ability to accurately express felt emotional states. It reflects that they are animated and emotionally charged and highly emotionally expressive individuals. Overly excessive and intense social behavior can leave a negative impression on others. The emotional explosion in individuals with mania may affect their interpersonal relationships.

On the emotional sensitivity scale there was a significant difference between the mean score of manic and the remission group and the manic and depressive group. Although, the significant difference was present between the groups, the mean score of the individual groups was within the normal ranges of the test. The manic group had a higher mean score of emotional expressivity scale indicating that the individuals in this group are outgoing and gregarious and can converse on just about any subject with anybody. However, there has not been much literature on the effect of social and emotional skills deficit in BD patients. The current study's findings add to this gap in literature.

Relationship between the social cognition, social skills and functional outcome in manic group

For the manic group, we found a significant relationship between the cognitive functioning domain of FAST and the RMET. This indicates that impairment in the cognitive functioning of the individuals was affecting their impairment on the theory of mind. The results are supported by the findings of Lahera et al. (2012) [96].

We also found a significant relationship between the personalizing bias score on IPSAQ and RMET performance indicating that the manic individuals with self-blaming attributions had a poorer RMET performance. This may reflect that the individuals with mania had difficulty in recognizing the emotional states of others because their own emotions were affecting their perception. No significant relationship was found between the social skills index and theory of mind in the manic patients.

A significant relationship between occupational functioning domain of FAST and negative external personal items of IPSAQ. This indicates that individuals with a difficulty in their occupational functioning had a tendency to attribute negative events happening to them to other individuals.

Significant relationship was also found between interpersonal functioning domain of FAST and positive external personal items of IPSAQ. This indicates that individuals with a difficulty in their interpersonal relationship had a tendency to attribute positive events happening to them to other individuals.

Relationship between the social cognition, social skills and functional outcome in remission group

For the remission group, we found a significant relationship between the occupational functioning, autonomy, interpersonal relationship and leisure time domains of FAST and the RMET. This indicates that difficulty in the occupational functioning, interpersonal relationships and the ability to enjoy of an individual was affecting their impairment on the theory of mind. Individuals with impairment in the psychosocial functioning had deficits in inferring the mental states of other. In a study conducted by Aydemir et. al 2020[117], findings indicated that deficits in facial emotional identification negatively impact social, daily, and hobby participation in BD.

Our study found no significant relationship between the theory of mind and the attributional style of the remission group. Similarly, no significant relationship was found between the social skills index and theory of mind.

A significant relationship was also found between leisure domain of FAST and IPSAQ- positive internal items. Individuals with a difficulty in managing their interest and hobbies had a tendency to attribute positive events to themselves. Hence, strong relationship was found between attributional style and functional impairment in this group.

The findings indicated a relationship between autonomy and cognitive functioning domains of FAST with SSI index. This reflects those individuals with a difficulty in managing their needs and difficulty in

carrying out mental operations and a deficit in their social skills. Patients diagnosed with bipolar disorder may experience difficulty in their attention and concentration causing them difficulty in carrying out higher cognitive functions.

The present study also found a relationship between low SSI index score and IPSAQ-NEGATIVE-internal item. This indicates that individuals with a lower SSI index had a tendency to attribute negative events that happen to themselves.

Relationship between the social cognition, social skills and functional outcome in depressive group

Our study found no significant relationship between theory of mind and functioning in the depressive bipolar patients.

We found a relationship between the IPSAQ-POSITIVE-external personal items on IPSAQ and RMET performance. This reflects that that the depressive individuals with a tendency to attribute positive events to external personal causes had a deficit in their RMET performance.

Significant relationship was found between the social skills index and theory of mind of the depressive patients. This reflects those individuals with low SSI index and had deficits in their theory of mind. As depression is known to disrupt concentration, induce feelings of worthlessness, and social withdrawal, it is likely that it interferes with social behaviour and the desire to interact with others as well [(118)]. According to Rohde, Lewinsohn, and Seeley (1990)[(119)], once-depressed people still have lower self-rated social skills than never-depressed controls after an episode of depression has ended.

No significant relationship was found between functioning and attributional style in patients in depressive phase.

In our study, we found a significant relationship between autonomy domain of FAST and Total SSI index. This reflects that those individuals with a difficulty in managing their interests and needs and low score social skills index.

The present study also found a significant relationship between low SSI index score and IPSAQ-NEGATIVE- external personal and NEGATIVE-external situational items. This indicates that individuals with a lower SSI index had a tendency to attribute negative events that happen to them to other individuals or to external situations.

SUMMARY AND CONCLUSION

SUMMARY

The aim of the study was to investigate social cognition domains, theory of mind and attribution style, social skills and functioning in the patients with manic, depressive and remission phase of bipolar I disorder. Diagnosis of the study population was made according to the diagnostic criteria of DSM-5. A total number of 90 patients (30 in each group) fulfilling the laid down inclusion and exclusion criteria were recruited and assessed with the help of HDRS, YMRS, RMET, I.P.S.A.Q, FAST and SSI inventory. The data was then analyzed and following conclusions were reached-

- Majority of patients were seen in age group of 31-50 years (48%). The mean age of patients in manic, depressive and remission group was 39.83, 40.07 & 43.07 years respectively in our study.
- 59% of the patients were from urban background and 41% of the patients from rural background.
- Among the patients 78% were males and 22% were females.
- ToM deficits were found in all the groups i.e., manic, depressive and remission Bipolar.
- Significant difference was also found between all the three groups for negative internal attributions. Remission group had more tendency to attribute negative events to self.
- Impairment in functioning was highest in depressive group, followed by manic group and then the remission group.
- Social skill deficits were present in depressive and manic group.
- Manic patients with a difficulty in the occupational functioning had a tendency to attribute negative events happening to them to other individuals.
- Significant relationship was found between impairment in psychosocial functioning and theory of mind deficits in remission group.

- Significant relationship between low SSI index score and a tendency to attribute negative events to self in remission group.
- Significant relationship was found between the social skills index and theory of mind of the depressive patients. This reflects those individuals with low SSI index and had deficits in their theory of mind.

To conclude the present study suggested that deficits in theory of mind were present in all the BD patients irrespective of the mood symptomology. Psychosocial functioning impairment was present even in the remission phase of the illness. Deficits in social skills were present in the depressed and the remission bipolar patients. The findings of the present study would aid to enrich the existing fund of knowledge regarding this important domain. The specific social skills deficit areas should be targeted to improve social skills functioning. The findings would help in efficient planning of rehabilitation programmes for bipolar patients.

LIMITATIONS

1. This study was a hospital-based study and the findings may not be generalized to the entire population of patients with bipolar disorder.
2. The sample size of the study population was small.
3. Not all domains of social cognition were assessed due to time constraint.
4. The study could have included the participants with Bipolar II diagnosis for a more detailed finding of the performance between the different groups.

Implications:

Theory of mind and attribution style impact the way we perceive the information and events from our environment. Social skills are necessary for communication with the other individuals in different situations in the society thus impacting ones survival. The deficit in these skills is the root cause of various psychological problems. Difficulties in these spheres affect the psychosocial functioning of the patients with bipolar disorder. The present work is a forward effort in this direction to explore and throw light on relationship between these variables. The understanding of the relationship between theory of mind, attribution style, social skills and functioning and their impact will aid in nonpharmacological management of patients with BD. Early detection and timely intervention will help to prevent further deficits and impairments in psychological and social functioning so that the quality of life is not compromised.

FUTURE DIRECTIONS

Future studies on social cognition could include observer ratings along with behavioral assessments for a better understanding of these variables. A better and deeper understanding can be provided with the addition of some more variables such as socio- cultural factors. Recognition of specific social skills deficits should be accompanied by social skills training for those target areas to improve the overall functioning of the Bipolar patients.

BIBLIOGRAPHY

1. Samamé C, Martino DJ, Strejilevich SA. Social cognition in euthymic bipolar disorder: systematic review and meta-analytic approach. Acta Psychiatr Scand. 2012;125(4):266–80.
2. Murthy RS. National Mental Health Survey of India 2015–2016. Indian J Psychiatry. 2017;59(1):21–6.
3. Faedda GL, Baldessarini RJ, Suppes T, Tondo L, Becker I, Lipschitz DS. Pediatric-onset bipolar disorder: a neglected clinical and public health problem. Harv Rev Psychiatry. 1995;3(4):171–95.
4. McMahon FJ, Stine OC, Chase GA, Meyers DA, Simpson SG, DePaulo JR. Influence of clinical subtype, sex, and lineality on age at onset of major affective disorder in a family sample. Am J Psychiatry. 1994;151(2):210–5.
5. Suppes T, Leverich GS, Keck PE, Nolen WA, Denicoff KD, Altshuler LL, et al. The Stanley Foundation Bipolar Treatment Outcome Network. II. Demographics and illness characteristics of the first 261 patients. J Affect Disord. 2001;67(1–3):45–59.
6. Bloom FE, Kupfer DJ. Psychopharmacology: The Fourth Generation of Progress : an Official Publication of the American College of Neuropsychopharmacology. Raven Press; 1995.p. 2002
7. Merikangas KR, Jin R, He J-P, Kessler RC, Lee S, Sampson NA, et al. Prevalence and Correlates of Bipolar Spectrum Disorder in the World Mental Health Survey Initiative. Arch Gen Psychiatry. 2011;68(3):241–51.
8. Roy-Byrne P, Post RM, Uhde TW, Porcu T, Davis D. The longitudinal course of recurrent affective illness: life chart data from research patients at the NIMH. Acta Psychiatr Scand Suppl. 1985;317:1–34.
9. American Psychiatric Association. Diagnostic and statistical manual of mental disorders: DSM-5. Arlington, VA: American Psychiatric Association.2013

10. McGuffin P, Rijsdijk F, Andrew M, Sham P, Katz R, Cardno A. The heritability of bipolar affective disorder and the genetic relationship to unipolar depression. Arch Gen Psychiatry. 2003;60(5):497–502.
11. Alda M. Bipolar Disorder: From Families to Genes. Can J Psychiatry. 1997;42(4):378–87.
12. Kato T, Kunugi H, Nanko S, Kato N. Association of bipolar disorder with the 5178 polymorphism in mitochondrial DNA. Am J Med Genet. 2000;96(2):182–6.
13. Wender PH, Kety SS, Rosenthal D, Schulsinger F, Ortmann J, Lunde I. Psychiatric disorders in the biological and adoptive families of adopted individuals with affective disorders. Arch Gen Psychiatry. 1986;43(10):923–9.
14. Schulze TG. Genetic research into bipolar disorder: the need for a research framework that integrates sophisticated molecular biology and clinically-informed phenotype characterization. Psychiatr Clin North Am. 2010;33(1):67–82.
15. Budde M, Forstner AJ, Adorjan K, Schaupp SK, Nöthen MM, Schulze TG. [Genetics of bipolar disorder]. Nervenarzt. 2017;88(7):755–9.
16. Karege F, Perret G, Bondolfi G, Schwald M, Bertschy G, Aubry J-M. Decreased serum brain-derived neurotrophic factor levels in major depressed patients. Psychiatry Res. 2002;109(2):143–8.
17. Schildkraut JJ. The catecholamine hypothesis of affective disorders: a review of supporting evidence. Am J Psychiatry. 1965;122(5):509–22.
18. Stockmeier CA. Involvement of serotonin in depression: evidence from postmortem and imaging studies of serotonin receptors and the serotonin transporter. J Psychiatr Res. 2003;37(5):357–73.
19. Bauer M, London ED, Rasgon N, Berman SM, Frye MA, Altshuler LL, et al. Supraphysiological doses of levothyroxine alter regional

cerebral metabolism and improve mood in bipolar depression. Mol Psychiatry. 2005;10(5):456–69.

20. Hallahan B, Newell J, Soares JC, Brambilla P, Strakowski SM, Fleck DE, et al. Structural magnetic resonance imaging in bipolar disorder: an international collaborative mega-analysis of individual adult patient data. Biological psychiatry. 2011;69(4):326-35.
21. Freund N, Juckel G. Bipolar Disorder: Its Etiology and How to Model in Rodents. Methods Mol Biol Clifton NJ. 2019;2011:61–77.
22. Takaesu Y. Circadian rhythm in bipolar disorder: A review of the literature. Psychiatry Clin Neurosci. 2018;72(9):673–82.
23. Plante DT, Winkelman JW. Sleep Disturbance in Bipolar Disorder: Therapeutic Implications. Am J Psychiatry. 2008;165(7):830–43.
24. Colombo C, Benedetti F, Barbini B, Campori E, Smeraldi E. Rate of switch from depression into mania after therapeutic sleep deprivation in bipolar depression. Psychiatry Res. 1999;86(3):267–70.
25. Bokanowski T. On Freud's Mourning and Melancholia. Routledge; 2018. p. 240.
26. Bibring E. The mechanism of depression. In: Affective disorders; psychoanalytic contributions to their study. Oxford, England: International Universities Press; 1953. p. 13–48.
27. Fairbairn's Theory of Depression [Internet]. [cited 2022 Mar 14]. Available from: http://www.columbia.edu/~rr322/Depressn.html
28. Pao P-N. On Manic-Depressive Psychosis: A Study of the Transition of States. J Am Psychoanal Assoc. 1968;16(4):809–32.
29. Thompson NL. Karl Abraham in New York: The Contributions of Bertram D. Lewin. Psychoanal Hist. 2010;12(1):85–96.
30. PEP Web - A Contribution to the Psychogenesis of Manic-Depres...:14.
31. Ferster CB. A functional analysis of depression. Am Psychol. 1973;28(10):857–70.

32. Lewinsohn PM. A behavioral approach to depression. In: The psychology of depression: Contemporary theory and research. Oxford, England: John Wiley & Sons; 1974. p. xvii, 318–xvii, 318.
33. Seligman ME. Depression and learned helplessness. In: The psychology of depression: Contemporary theory and research. Oxford, England: John Wiley & Sons; 1974. p. xvii, 318–xvii, 318.
34. Abramson LY, Seligman ME, Teasdale JD. Learned helplessness in humans: critique and reformulation. Journal of abnormal psychology. 1978;87(1):49.
35. Meyer TD, Finucane L, Jordan G. Is risk for mania associated with increased daydreaming as a form of mental imagery? J Affect Disord. 2011;135(1–3):380–3.
36. Mansell W, Pedley R. The ascent into mania: a review of psychological processes associated with the development of manic symptoms. Clin Psychol Rev. 2008;28(3):494–520.
37. Tohen M, Zarate CA, Hennen J, Khalsa H-MK, Strakowski SM, Gebre-Medhin P, et al. The McLean-Harvard First-Episode Mania Study: prediction of recovery and first recurrence. Am J Psychiatry. 2003;160(12):2099–107.
38. Angst J, Sellaro R. Historical perspectives and natural history of bipolar disorder. Biol Psychiatry. 2000;48(6):445–57.
39. Kupka RW, Luckenbaugh DA, Post RM, Leverich GS, Nolen WA. Rapid and non-rapid cycling bipolar disorder: a meta-analysis of clinical studies. J Clin Psychiatry. 2003;64(12):1483–94.
40. Bauer M, Beaulieu S, Dunner DL, Lafer B, Kupka R. Rapid cycling bipolar disorder--diagnostic concepts. Bipolar Disord. 2008;10(1 Pt 2):153–62.
41. Thase ME, Sloan DME, Kornstein SG. Remission as the critical outcome of depression treatment. Psychopharmacol Bull. 2002;36(4):12–25.

42. Hirschfeld RM, Calabrese JR, Frye MA, Lavori PW, Sachs G, Thase ME, et al. Defining the clinical course of bipolar disorder: response, remission, relapse, recurrence, and roughening. Psychopharmacol Bull. 2007;40(3):7–14.
43. Green MF, Penn DL, Bentall R, Carpenter WT, Gaebel W, Gur RC, et al. Social Cognition in Schizophrenia: An NIMH Workshop on Definitions, Assessment, and Research Opportunities. Schizophr Bull. 2008;34(6):1211–20.
44. Fiske ST, Taylor SE. Social cognition. New York: McGraw-Hill; 1991.
45. Baron RA, Branscombe NR. Social Psychology. Pearson; 2012.p. 509
46. Premack D, Woodruff G. Does the chimpanzee have a theory of mind? Behav Brain Sci. 1978;1(4):515–26.
47. Baron-Cohen S, Wheelwright S, Hill J, Raste Y, Plumb I. The "Reading the Mind in the Eyes" Test revised version: a study with normal adults, and adults with Asperger syndrome or high-functioning autism. J Child Psychol Psychiatry. 2001;42(2):241–51.
48. Fernyhough C, Jones SR, Whittle C, Waterhouse J, Bentall RP. Theory of mind, schizotypy, and persecutory ideation in young adults. Cognit Neuropsychiatry. 2008;13(3):233–49.
49. Frith CD, Frith U. The neural basis of mentalizing. Neuron. 2006;50(4):531–4.
50. Striano T, Reid VM. Social cognition in the first year. Trends Cogn Sci. 2006;10(10):471–6.
51. Baron-Cohen S. Autism and Asperger syndrome. New York, NY, US: Oxford University Press; 2008. xii, 157 p. (Autism and Asperger syndrome).
52. Sabbagh MA. Understanding orbitofrontal contributions to theory-of-mind reasoning: implications for autism. Brain Cogn. 2004;55(1):209–19.

53. Vaskinn A, Sundet K, Hultman CM, Friis S, Andreassen OA. Social problem-solving in high-functioning schizophrenia: Specific deficits in sending skills. Psychiatry Res. 2009;165(3):215–23.
54. Brüne M, Brüne-Cohrs U. Theory of mind--evolution, ontogeny, brain mechanisms and psychopathology. Neurosci Biobehav Rev. 2006;30(4):437–55.
55. Carpendale JIM, Lewis C. Constructing an understanding of mind: The development of children's social understanding within social interaction. Behav Brain Sci. 2004;27(1):79–151.
56. Kerr N, Dunbar RIM, Bentall RP. Theory of mind deficits in bipolar affective disorder. J Affect Disord. 2003;73(3):253–9.
57. Weary G, Stanley MA, Harvey JH. Attribution. New York, NY, US: Springer-Verlag Publishing; 1989. x, 244 p. (Attribution).
58. Malle BF. Attribution theories: How people make sense of behavior. In: Theories in social psychology. Wiley Blackwell; 2011. p. 72–95.
59. Heider F. The psychology of interpersonal relations. Hoboken, NJ, US: John Wiley & Sons Inc; 1958. ix, 326 p. (The psychology of interpersonal relations).
60. Jones EE, Davis KE. From Acts To Dispositions The Attribution Process In Person Perception11Much of the research reported herein was supported by National Science Foundation Grants 8857 and 21955 to the first author. In: Berkowitz L, editor. Advances in Experimental Social Psychology [Internet]. Academic Press; 1965 [cited 2022 Mar 15]. p. 219–66. Available from: https://www.sciencedirect.com/science/article/pii/S0065260108601070
61. Minniti A. Skills and Techniques for Attribution Retraining (STAR). 2004.
62. Weiner B, Heckhausen H, Meyer WU. Causal ascriptions and achievement behavior: a conceptual analysis of effort and reanalysis of locus of control. J Pers Soc Psychol. 1972;21(2):239–48.

63. Peterson C, Semmel A, von Baeyer C, Abramson LY, Metalsky GI, Seligman MEP. The attributional Style Questionnaire. Cogn Ther Res. 1982;6(3):287–99.
64. Sanjuan P, Magallares A. A longitudinal study of the negative explanatory style and attributions of uncontrollability as predictors of depressive symptoms. Personal Individ Differ. 2009;46:714–8.
65. Mansell W, Morrison A, Reid G, Lowens I, Tai S. The Interpretation of and Responses to Changes in Internal States An Integrative Cognitive Model of Mood Swings and Bipolar Disorders. Behav Cogn Psychother. 2007;35:515–39.
66. Mansell W, Paszek G, Seal K, Pedley R, Jones S, Thomas N, et al. Extreme appraisals of internal states in bipolar I disorder: A multiple control group study. Cogn Ther Res. 2011;35(1):87–97.
67. Abood Z, Sharkey A, Webb M, Kelly A, Gill M. Are patients with bipolar affective disorder socially disadvantaged? A comparison with a control group. Bipolar Disord. 2002;4(4):243–8.
68. Tohen M, Waternaux CM, Tsuang MT. Outcome in Mania. A 4-year prospective follow-up of 75 patients utilizing survival analysis. Arch Gen Psychiatry. 1990;47(12):1106–11.
69. Kupfer DJ, Frank E, Grochocinski VJ, Cluss PA, Houck PR, Stapf DA. Demographic and clinical characteristics of individuals in a bipolar disorder case registry. J Clin Psychiatry. 2002;63(2):120–5.
70. Morbidity in 303 first-episode bipolar I disorder patients - PubMed [Internet]. [cited 2022 Mar 15]. Available from: https://pubmed.ncbi.nlm.nih.gov/20565433/
71. Perez JE, Riggio RE, Kopelowicz A. Social skill imbalances in mood disorders and schizophrenia. Personal Individ Differ. 2007;42(1):27–36.
72. Social Skills Training Can Positively Impact Your Life [Internet]. [cited 2022 Mar 15]. Available from:

https://ezinearticles.com/?Social-Skills-Training-Can-Positively-Impact-Your-Life&id=33618

73. Liberman RP, Wallace CJ, Blackwell G, Kopelowicz A, Vaccaro JV, Mintz J. Skills training versus psychosocial occupational therapy for persons with persistent schizophrenia. Am J Psychiatry. 1998;155(8):1087–91.
74. [PDF] Social Skills for Teenagers and Adults with Asperger Syndrome by Nancy J Patrick | Perlego [Internet]. [cited 2022 Mar 15]. Available from: https://www.perlego.com/book/951912/social-skills-for-teenagers-and-adults-with-asperger-syndrome-a-practical-guide-to-daytoday-life-pdf
75. Saffron G. Social Skills Improvement System. [cited 2022 Mar 15]; Available from: https://www.academia.edu/17387942/Social_Skills_Improvement_System
76. Givertz CSM. METHODS OF SOCIAL SKILLS TRAINING AND DEVELOPMENT. In: Handbook of Communication and Social Interaction Skills. Routledge; 2003.
77. Peer Reinforcement and Sociometric Status on JSTOR [Internet]. [cited 2022 Mar 15]. Available from: https://www.jstor.org/stable/1127099
78. Hughes JN, Sullivan KA. Outcome assessment in social skills training with children. J Sch Psychol. 1988;26(2):167–83.
79. Agaliotis I, Kalyva E. Nonverbal social interaction skills of children with learning disabilities. Res Dev Disabil. 2008;29(1):1–10.
80. Goodwin FK, Jamison KR. Manic-Depressive Illness: Bipolar Disorders and Recurrent Depression. Oxford University Press; 2007. p.1289
81. Inoue Y, Tonooka Y, Yamada K, Kanba S. Deficiency of theory of mind in patients with remitted mood disorder. J Affect Disord. 2004;82(3):403–9.

82. Montag C, Ehrlich A, Neuhaus K, Dziobek I, Heekeren H, Heinz A, et al. Theory of mind impairments in euthymic bipolar patients. J Affect Disord. 2009;123:264–9.
83. Purcell AL, Phillips M, Gruber J. In your eyes: does theory of mind predict impaired life functioning in bipolar disorder? J Affect Disord. 2013;151(3):1113–9.
84. Barrera A, Vázquez G, Tannenhaus L, Lolich M, Herbst L. Theory of mind and functionality in bipolar patients with symptomatic remission. Rev Psiquiatr Salud Ment. 2013;6(2):67–74.
85. Bora E, Bartholomeusz C, Pantelis C. Meta-analysis of Theory of Mind (ToM) impairment in bipolar disorder. Psychol Med. 2016;46(2):253–64.
86. Sweeney PD, Anderson K, Bailey S. Attributional style in depression: a meta-analytic review. J Pers Soc Psychol. 1986;50(5):974–91.
87. Lyon HM, Startup M, Bentall RP. Social cognition and the manic defense: attributions, selective attention, and self-schema in bipolar affective disorder. J Abnorm Psychol. 1999;108(2):273–82.
88. Reilly-Harrington N, Miklowitz D, Otto M, Frank E, Wisniewski S, Thase M, et al. Dysfunctional Attitudes, Attributional Styles, and Phase of Illness in Bipolar Disorder. Cogn Ther Res. 2008;
89. Stange JP, Sylvia LG, Magalhães PV da S, Frank E, Otto MW, Miklowitz DJ, et al. Extreme Attributions Predict Transition from Depression to Mania or Hypomania in Bipolar Disorder. J Psychiatr Res. 2013;47(10):1329–36.
90. Lahera G, Herrera S, Reinares M, Benito A, Rullas M, González-Cases J, et al. Hostile attributions in bipolar disorder and schizophrenia contribute to poor social functioning. Acta Psychiatr Scand. 2015;131(6):472–82.

91. Easwaran K, Palaniappan P. Social cue recognition and attributional bias in remitted bipolar disorder: Impact on social functioning. Psychiatry Res. 2021;306:114300.
92. MacQueen GM, Young LT, Joffe RT. A review of psychosocial outcome in patients with bipolar disorder. Acta Psychiatr Scand. 2001;103(3):163–70.
93. Goldberg JF, Harrow M. Subjective life satisfaction and objective functional outcome in bipolar and unipolar mood disorders: a longitudinal analysis. J Affect Disord. 2005;89(1–3):79–89.
94. Fagiolini A, Kupfer DJ, Masalehdan A, Scott JA, Houck PR, Frank E. Functional impairment in the remission phase of bipolar disorder. Bipolar Disord. 2005;7(3):281–5.
95. Rosa AR, Reinares M, Michalak EE, Bonnin CM, Sole B, Franco C, et al. Functional impairment and disability across mood states in bipolar disorder. Value Health J Int Soc Pharmacoeconomics Outcomes Res. 2010;13(8):984–8.
96. Lahera G, Ruiz-Murugarren S, Iglesias P, Ruiz-Bennasar C, Herrería E, Montes JM, et al. Social cognition and global functioning in bipolar disorder. J Nerv Ment Dis. 2012;200(2):135–41.
97. Cusi AM, Macqueen GM, McKinnon MC. Patients with bipolar disorder show impaired performance on complex tests of social cognition. Psychiatry Res. 2012;200(2–3):258–64.
98. Mehta S, Mittal PK, Swami MK. Psychosocial Functioning in Depressive Patients: A Comparative Study between Major Depressive Disorder and Bipolar Affective Disorder. Depress Res Treat [Internet]. 2014 [cited 2021 Feb 25];2014. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3972948/
99. Goldstein TR, Miklowitz DJ, Mullen KL. Social skills knowledge and performance among adolescents with bipolar disorder. Bipolar Disord. 2006;8(4):350–61.

100. Pope M, Dudley R, Scott J. Determinants of social functioning in bipolar disorder. Bipolar Disord. 2007;9(1–2):38–44.
101. Castanho de Almeida Rocca C, Britto de Macedo-Soares M, Gorenstein C, Sayuri Tamada R, Kluger Issler C, Silva Dias R, et al. Social Dysfunction in Bipolar Disorder: Pilot Study. Aust N Z J Psychiatry. 2008;42(8):686–92.
102. Depp CA, Mausbach BT, Harvey PD, Bowie CR, Wolyniec PS, Thornquist MH, et al. Social competence and observer-rated social functioning in bipolar disorder. Bipolar Disord. 2010;12(8):843–50.
103. Martini T, Czepielewski LS, Fijtman A, Sodré L, Wollenhaupt-Aguiar B, Pereira CS, et al. Bipolar Disorder Affects Behavior and Social Skills on the Internet. PLOS ONE. 2013;8(11):e79673.
104. Fernandes FBF, Rocca CC, Gigante AD, Dottori-Silva PR, Gerchmann L, Rossini D, et al. The association between social skills deficits and family history of mood disorder in bipolar I disorder. Braz J Psychiatry. 2018;40(3):244–8.
105. Hamilton M. A rating scale for depression. J Neurol Neurosurg Psychiatry. 1960;23:56–62.
106. Bagby RM, Ryder AG, Schuller DR, Marshall MB. The Hamilton Depression Rating Scale: has the gold standard become a lead weight? Am J Psychiatry. 2004;161(12):2163–77.
107. Zimmerman M, Martinez JH, Young D, Chelminski I, Dalrymple K. Severity classification on the Hamilton Depression Rating Scale. J Affect Disord. 2013;150(2):384–8.
108. Young RC, Biggs JT, Ziegler VE, Meyer DA. A rating scale for mania: reliability, validity and sensitivity. Br J Psychiatry J Ment Sci. 1978;133:429–35.
109. Pinkham AE, Penn DL, Green MF, Harvey PD. Social Cognition Psychometric Evaluation: Results of the Initial Psychometric Study. Schizophr Bull. 2016;42(2):494–504.

110. Kinderman P, Bentall RP. A new measure of causal locus: the internal, personal and situational attributions questionnaire. Personal Individ Differ. 1996;20(2):261–4.
111. Rosa AR, Sánchez-Moreno J, Martínez-Aran A, Salamero M, Torrent C, Reinares M, et al. Validity and reliability of the Functioning Assessment Short Test (FAST) in bipolar disorder. Clin Pract Epidemiol Ment Health CP EMH. 2007;3:5.
112. Riggio RE. Social skills inventory: manual. Consulting Psychologists Press; 1989.p. 21
113. Kumar R, Ram D. EVOLUTION OF SYMPTOMS OF MANIA. Indian J Psychiatry. 2001;43(3):235–41.
114. Espinós U, Fernández-Abascal EG, Ovejero M. Theory of mind in remitted bipolar disorder: Interpersonal accuracy in recognition of dynamic nonverbal signals. PLoS ONE. 2019;14(9):e0222112.
115. Zarate CA, Tohen M, Land M, Cavanagh S. Functional impairment and cognition in bipolar disorder. Psychiatr Q. 2000;71(4):309–29.
116. Cole DA, Milstead M. Behavioral correlates of depression: Antecedents or consequences? J Couns Psychol. 1989;36(4):408–16.
117. Aydemir O, Akkaya C, Uykur B, Erol A. Effect of facial emotion recognition on subjective psychosocial functioning in bipolar patients. Acta Psychiatr Scand. 2013;127(5):412-3.
118. Segrin C. Social skills deficits associated with depression. Clin Psychol Rev. 2000;20(3):379–403.
119. Rohde P, Lewinsohn PM, Seeley JR. Are people changed by the experience of having an episode of depression? A further test of the scar hypothesis. J Abnorm Psychol. 1990;99(3):264–71.

KEY TO MASTER CHART

BD	Bipolar Disorder
FAST	Functioning Assessment Short Test
HDRS	Hamilton Depression Rating Scale
IPSAQ	Internal, Personal and Situational Attribute Questionnaire
RMET	Revised reading the mind in the eyes task
SES	Socio economic status
SSI	Social Skills Inventory
YMRS	Young Mania Rating Scale

S. No.	Age	Sex	MRD	Education	Occupation	Address	Family Type	SES	Diagnosis	Phase	HDRS	YMRS	RMET	FAST	FAST	FAST	FAST	FAST	FAST	I	P	S
																				poitive	poitive	poitive
														Autonomy	Occupational Functioning	Cognitive Functioning	financial issue	interpersonal relationship	leisure time	internal	external personal	external situational
1	29	male	1259562	post graduate	professional	urban	nuclear	upper	BD	manic	0	38	23	0	2	2	0	1	0	2	7	7
2	25	male	506552	12	unemployed	urban	joint	upper middle	BD	manic	0	40	26	0	2	0	0	2	0	8	4	4
3	47	male	1211891	10	shopkeeper	urban	joint	upper middle	BD	manic	0	39	22	0	2	3	0	1	0	4	8	4
4	40	male	101214	10	farmer	rural	joint	upper middle	BD	manic	0	35	19	0	0	0	0	4	0	8	5	3
5	23	female	1217878	graduate	student	urban	joint	upper middle	BD	manic	0	37	15	2	3	2	0	2	0	5	6	5
6	48	male	4387	10	shopkeeper	urban	joint	upper middle	BD	manic	0	52	14	0	0	0	1	2	0	9	4	3
7	24	male	1195804	graduate	shopkeeper	urban	joint	upper middle	BD	manic	0	28	23	2	0	1	0	1	2	6	10	0
8	24	male	36832	12	farmer	rural	joint	upper middle	BD	manic	0	14	19	2	0	1	0	1	2	7	8	1
9	33	male	947510	10	farmer	rural	nuclear	upper middle	BD	manic	0	40	18	0	2	0	0	2	0	8	6	2
10	19	male	1218666	12	student	rural	joint	upper middle	BD	manic	0	39	15	0	0	0	0	5	0	9	3	4
11	23	female	1222997	graduate	student	urban	nuclear	upper middle	BD	manic	0	39	11	0	1	0	0	3	1	7	7	2
12	57	male	595676	10	shopkeeper	urban	joint	upper middle	BD	manic	0	34	10	0	0	2	0	2	0	4	7	5
13	31	male	1199186	12	farmer	rural	joint	upper middle	BD	manic	0	34	15	0	0	0	1	1	0	1	11	4
14	21	male	1193762	graduate	student	urban	joint	upper middle	BD	manic	0	34	15	0	0	0	0	0	0	6	5	5
15	53	male	1209499	10	shopkeeper	urban	joint	upper middle	BD	manic	0	36	16	0	0	2	0	2	0	3	8	4
16	53	male	675584	10	farmer	rural	joint	upper middle	BD	manic	0	28	1	0	2	1	1	3	2	7	7	2
17	45	male	709234	10	farmer	rural	joint	upper middle	BD	manic	0	28	17	0	0	0	0	4	1	9	3	4
18	45	female	1205437	graduate	other	urban	joint	upper middle	BD	manic	0	30	20	2	0	3	0	1	0	9	3	4
19	60	male	154269	up to matric	shopkeeper	urban	joint	upper middle	BD	manic	0	31	22	4	0	3	0	0	0	4	9	5
20	53	male	142742	up to matric	farmer	rural	joint	upper lower	BD	manic	0	33	26	4	0	2	0	0	0	1	12	3
21	59	male	77547	12	shopkeeper	urban	joint	upper middle	BD	manic	0	31	20	0	0	3	0	2	0	7	5	2
22	60	male	1180404	up to matric	other	urban	joint	upper lower	BD	manic	0	32	19	1	1	1	0	2	0	5	9	2
23	55	male	50283	10	farmer	rural	joint	upper middle	BD	manic	0	30	19	0	0	3	0	2	0	1	11	4
24	58	male	1196517	12	shopkeeper	urban	nuclear	upper lower	BD	manic	0	31	20	1	2	1	1	1	0	5	8	3
25	60	female	226844	up to matric	other	urban	joint	upper middle	BD	manic	0	31	18	4	0	3	0	0	0	3	6	7
26	60	male	42333	up to matric	farmer	rural	joint	upper lower	BD	manic	0	28	18	2	3	1	0	2	0	4	7	5
27	27	male	1253991	graduate	shopkeeper	urban	joint	upper middle	BD	manic	0	34	15	1	0	2	0	3	1	3	8	5
28	25	male	359952	graduate	shopkeeper	urban	nuclear	upper middle	BD	manic	0	35	22	0	1	4	0	0	1	0	9	7
29	19	male	1042399	12	student	urban	nuclear	upper middle	BD	manic	0	33	25	0	0	2	0	3	1	3	8	5
30	19	male	1163164	12	student	urban	joint	upper lower	BD	manic	0	34	30	0	1	2	0	3	1	3	8	5
31	36	male	579796	10	farmer	rural	joint	lower middle	BD	remission	0	5	26	0	0	2	2	2	0	7	8	1
32	55	female	50914	illiterate	other	urban	joint	upper lower	BD	remission	7	0	25	1	2	3	0	1	2	3	10	3
33	36	male	41676	10	semi skilled	rural	joint	upper lower	BD	remission	0	6	22	0	2	0	0	2	1	7	7	2
34	60	female	1130348	illiterate	other	urban	joint	lower middle	BD	remission	6	0	21	2	0	4	0	2	2	8	6	3
35	29	male	40689	12	unemployed	urban	joint	lower middle	BD	remission	0	6	20	0	2	0	2	2	0	8	3	5
36	41	male	44390	up to matric	unemployed	rural	joint	upper lower	BD	remission	0	9	19	0	3	0	2	0	0	4	8	4
37	37	female	26981	12	other	rural	joint	lower middle	BD	remission	7	0	19	2	0	3	1	2	0	11	2	3
38	60	female	1165033	illiterate	other	rural	joint	lower middle	BD	remission	5	0	20	1	0	5	0	2	2	4	8	4
39	60	female	1153694	graduate	other	urban	nuclear	upper middle	BD	remission	6	0	20	2	2	5	0	0	2	3	10	3
40	41	male	1094396	12	semi skilled	urban	nuclear	upper	BD	remission	4	0	18	0	0	2	1	2	0	5	10	1
41	34	male	715383	12	farmer	rural	joint	upper lower	BD	remission	5	0	18	1	1	2	0	2	0	10	3	3
42	51	male	110763	12	farmer	rural	joint	lower middle	BD	remission	0	10	17	0	2	1	1	2	0	8	7	1
43	33	male	1138203	graduate	unemployed	urban	joint	upper middle	BD	remission	5	0	17	0	2	0	0	2	0	10	2	4
44	51	male	38421	up to matric	semi skilled	rural	joint	lower middle	BD	remission	6	0	15	0	0	0	0	0	0	3	8	5
45	47	female	529460	up to matric	other	urban	joint	upper middle	BD	remission	2	0	15	2	0	4	0	2	0	6	7	3
46	46	male	60524	12	semi skilled	rural	joint	lower middle	BD	remission	0	9	14	1	2	2	1	2	0	10	4	2
47	54	male	42649	illiterate	farmer	rural	joint	upper lower	BD	remission	0	2	19	0	0	0	0	0	0	8	7	1
48	48	male	899140	10	semi skilled	urban	nuclear	upper middle	BD	remission	0	7	19	0	0	3	4	1	0	7	7	2
49	23	male	750375	12	student	rural	nuclear	lower middle	BD	remission	6	0	20	0	1	0	0	2	0	8	3	5
50	40	male	1162120	up to matric	farmer	rural	joint	lower middle	BD	remission	0	11	18	0	0	0	0	0	0	8	7	1
51	41	female	63882	up to matric	other	urban	joint	upper middle	BD	remission	4	0	16	0	2	1	1	2	0	9	6	1
52	36	male	1023845	graduate	semi skilled	urban	nuclear	upper	BD	remission	6	0	17	0	1	2	1	3	0	9	6	1

S. No.	Age	Sex	MRD	A	Q	negative	Externalizing bias	personalizing bias	S	S	I	social expressivity	Social Sensitivity	social control	total emotional	total social	expressivity	senstivity	control	TOTAL SSI	equilibruim index
				negative	negative				emotional expressivity	emotional senstivity	emotional control										
				internal	external personal	external situational															
1	29	male	1259562	0	6	10	2	0.375	60	54	37	62	35	65	151	162	122	89	102	313	45.937981
2	25	male	506552	1	9	6	7	0.6	62	57	38	62	39	65	157	166	124	96	103	323	45.81669987
3	47	male	1211891	4	10	2	0	0.833333333	55	38	39	61	29	55	132	145	116	67	94	277	45.60303135
4	40	male	101214	3	11	2	5	0.846153846	55	48	42	56	51	53	145	160	111	99	95	305	45.85673237
5	23	female	1217878	4	7	5	1	0.583333333	60	57	37	61	42	63	154	166	121	99	100	320	45.73776272
6	48	male	4387	4	10	2	5	0.833333333	56	43	33	65	32	63	132	160	121	75	96	292	45.45393943
7	24	male	1195804	3	8	5	3	0.615384615	40	40	37	34	41	54	117	129	74	81	91	246	45.58411957
8	24	male	36832	4	9	3	3	0.75	45	48	43	38	36	56	136	130	83	84	99	266	45.62202482
9	33	male	947510	1	8	7	7	0.533333333	60	58	41	61	39	60	159	160	121	97	101	319	45.73776272
10	19	male	1218666	1	11	4	8	0.733333333	62	54	41	66	41	66	157	173	128	95	107	330	45.62202482
11	23	female	1222997	1	11	4	6	0.733333333	57	56	39	54	40	56	152	150	111	96	95	302	46.06299606
12	57	male	595676	1	13	2	3	0.866666667	55	48	42	56	51	53	145	160	111	99	95	305	45.85673237
13	31	male	1199186	0	9	6	1	0.6	59	48	44	54	38	64	151	156	113	86	108	307	45.56528843
14	21	male	1193762	4	8	4	2	0.666666667	40	40	37	34	41	54	117	129	74	81	91	246	45.58411957
15	53	male	1209499	0	13	3	3	0.8125	59	60	42	61	43	59	161	163	120	103	101	324	45.836668
16	53	male	675584	4	9	3	3	0.75	59	60	42	61	43	59	161	163	120	103	101	324	45.27418437
17	45	male	709234	1	14	1	8	0.933333333	54	40	32	60	30	65	126	155	114	70	97	281	45.36319075
18	45	female	1205437	3	10	3	6	0.769230769	51	39	40	54	29	59	130	142	105	68	99	272	45.60303135
19	60	male	154269	2	10	4	2	0.714285714	55	52	45	49	37	58	152	144	104	89	103	296	45.56528843
20	53	male	142742	2	8	6	-1	0.571428571	48	47	47	45	33	56	142	134	93	80	103	276	46.02088787
21	59	male	77547	2	14	0	5	1	56	54	42	57	43	62	152	162	113	97	104	314	45.71825581
22	60	male	1180404	2	12	2	3	0.857142857	50	49	38	54	33	59	137	146	104	82	97	283	45.62202482
23	55	male	50283	1	12	3	0	0.8	56	54	42	57	43	62	152	162	113	97	104	314	45.73776272
24	58	male	1196517	2	10	4	3	0.714285714	52	55	39	57	45	54	146	156	109	100	93	302	46.2140611
25	60	female	226844	0	13	3	3	0.8125	50	49	38	54	33	59	137	146	104	82	97	283	45.62202482
26	60	male	42333	2	9	5	2	0.642857143	50	49	39	57	45	54	138	156	107	94	93	294	46.14859333
27	27	male	1253991	3	7	6	0	0.538461538	55	52	47	56	39	61	154	156	111	91	108	310	45.71825581
28	25	male	359952	1	4	11	-1	0.266666667	56	52	38	60	54	51	146	165	116	106	89	311	45.85673237
29	19	male	1042399	0	8	8	3	0.5	60	52	42	65	40	63	154	168	125	92	105	322	45.66026114
30	19	male	1163164	0	8	8	3	0.5	62	54	43	62	13	64	159	139	124	67	107	298	45.6795062
31	36	male	579796	1	13	2	6	0.866666667	59	48	31	36	31	69	138	136	95	79	100	274	45.54653693
32	55	female	50914	6	5	5	-3	0.5	32	28	37	18	54	30	97	102	50	82	67	199	46.08421996
33	36	male	41676	4	9	3	3	0.75	59	48	31	36	31	69	138	136	95	79	100	274	45.54653693
34	60	female	1130348	3	9	4	5	0.692307692	37	44	38	39	48	57	119	144	76	92	95	263	45.87689437
35	29	male	40689	2	8	6	6	0.571428571	40	54	45	44	37	54	139	135	84	91	99	274	45.25658351
36	41	male	44390	4	7	5	0	0.583333333	43	42	42	41	38	41	127	120	84	80	83	247	45.7968266
37	37	female	26981	3	10	3	8	0.769230769	40	13	31	45	31	69	84	145	85	44	100	229	45.56528843
38	60	female	1165033	2	10	4	2	0.714285714	40	13	31	45	31	69	84	145	85	44	100	229	45.58411957
39	60	female	1153694	2	10	4	1	0.714285714	37	44	38	39	48	57	119	144	76	92	95	263	45.87689437
40	41	male	1094396	3	9	4	2	0.692307692	59	48	31	45	31	69	138	145	104	79	100	283	45.43564535
41	34	male	715383	2	11	3	8	0.785714286	40	13	45	33	54	41	98	128	73	67	86	226	45.52786405
42	51	male	110763	5	7	4	3	0.636363636	55	43	52	53	32	50	150	135	108	75	102	285	45.43564535
43	33	male	1138203	1	11	4	9	0.733333333	59	54	40	55	36	57	153	148	114	90	97	301	45.95854812
44	51	male	38421	3	7	6	0	0.538461538	36	45	37	38	44	54	118	136	74	89	91	254	45.85673237
45	47	female	529460	4	6	6	2	0.5	38	29	43	32	30	38	110	100	70	59	81	210	46.08421996
46	46	male	60524	3	10	3	7	0.769230769	40	13	45	33	54	41	98	128	73	67	86	226	45.52786405
47	54	male	42649	4	8	4	4	0.666666667	59	57	41	63	33	63	157	159	122	90	104	316	45.47230743
48	48	male	899140	1	13	2	6	0.866666667	57	47	32	42	28	62	136	132	99	75	94	268	45.58411957
49	23	male	750375	0	10	6	8	0.625	42	54	47	44	38	54	143	136	86	92	101	279	45.58411957
50	40	male	1162120	7	5	4	1	0.555555556	41	43	36	38	48	54	120	140	79	91	90	260	45.73776272
51	41	female	63882	3	9	4	6	0.692307692	41	43	36	38	48	54	120	140	79	91	90	260	45.73776272
52	36	male	1023845	5	7	4	4	0.636363636	59	54	40	55	36	57	153	148	114	90	97	301	45.95854812

S. No.	Age	Sex	MRD	Education	Occupation	Address	Family Type	SES	Diagnosis	Phase	HDRS	YMRS	RMET	FAST	FAST	FAST	FAST	FAST	FAST	I	P	S
																				poitive	poitive	poitive
														Autonomy	Occupational Functioning	Cognitive Functioning	financial issue	interpersonal relationship	leisure time	internal	external personal	external situational
53	35	male	947930	12	semi skilled	rural	joint	lower middle	BD	remission	0	11	15	1	1	0	0	1	0	10	4	2
54	42	male	238925	up to matric	shopkeeper	urban	joint	upper middle	BD	remission	0	8	14	1	0	2	2	2	0	3	10	2
55	28	female	62916	post graduate	student	urban	joint	lower middle	BD	remission	4	0	18	1	0	3	0	5	0	5	8	3
56	40	male	1260077	post graduate	professional	urban	joint	upper	BD	remission	5	0	18	2	1	1	0	3	0	8	7	1
57	42	male	387768	up to matric	farmer	rural	joint	upper lower	BD	remission	0	7	20	1	2	2	2	2	0	8	6	2
58	60	female	1254991	12	other	rural	joint	lower middle	BD	remission	5	0	22	5	0	1	2	4	0	6	8	2
59	35	male	1166428	graduate	professional	urban	nuclear	upper middle	BD	remission	0	5	21	0	2	2	0	2	0	10	3	3
60	51	male	321418	12	shopkeeper	urban	joint	lower middle	BD	remission	0	8	21	0	0	1	2	2	0	9	4	3
61	34	male	787442	12	skilled worker	rural	joint	upper middle	BD	depressive	20	0	26	4	5	5	2	5	4	12	2	2
62	56	female	454927	up to matric	other	urban	joint	upper middle	BD	depressive	14	0	30	3	3	5	0	3	2	9	6	1
63	36	male	57261	12	skilled worker	rural	joint	upper middle	BD	depressive	23	0	27	4	5	5	3	5	2	9	4	3
64	25	male	421916	up to matric	other	urban	joint	upper lower	BD	depressive	19	0	25	4	3	5	2	7	2	11	2	3
65	32	male	144991	12	farmer	rural	joint	upper lower	BD	depressive	17	0	25	3	4	5	2	7	2	12	2	2
66	27	male	963185	graduate	farmer	rural	joint	upper lower	BD	depressive	12	0	22	2	3	2	0	5	2	10	3	3
67	53	male	598571	post graduate	professional	urban	nuclear	upper	BD	depressive	18	0	16	2	5	7	2	3	2	14	1	1
68	45	male	145530	12	farmer	rural	joint	upper middle	BD	depressive	19	0	16	3	5	5	2	5	2	9	4	3
69	38	male	125963	10	other	urban	joint	upper middle	BD	depressive	15	0	17	2	0	3	2	3	0	10	4	2
70	60	female	579790	up to matric	other	urban	joint	upper middle	BD	depressive	16	0	18	8	5	10	4	5	4	9	4	3
71	49	male	1206016	graduate	skilled worker	urban	joint	upper middle	BD	depressive	13	0	18	3	4	5	3	4	2	9	4	3
72	48	male	1195183	12	shopkeeper	urban	nuclear	upper middle	BD	depressive	12	0	11	4	5	5	2	4	2	10	3	3
73	24	male	1250816	up to matric	skilled worker	urban	nuclear	lower middle	BD	depressive	15	0	11	3	2	1	0	12	4	13	1	2
74	42	female	122720	10	other	rural	joint	upper middle	BD	depressive	15	0	14	2	8	8	1	7	3	10	3	3
75	47	male	1201515	10	shopkeeper	urban	joint	upper middle	BD	depressive	20	0	14	2	5	5	2	12	2	9	5	2
76	49	male	544206	up to matric	skilled worker	urban	joint	upper	BD	depressive	13	0	16	2	8	8	1	7	4	9	4	3
77	36	female	1217788	12	other	urban	joint	upper middle	BD	depressive	15	0	15	2	0	2	0	3	4	10	5	1
78	33	female	1188586	graduate	other	urban	joint	upper middle	BD	depressive	12	0	11	3	0	5	0	6	0	8	6	2
79	25	male	1243227	12	unemployed	urban	joint	upper lower	BD	depressive	17	0	11	0	5	5	0	6	2	7	6	2
80	47	female	1188033	graduate	other	urban	joint	upper middle	BD	depressive	14	0	12	3	0	5	2	6	2	8	5	2
81	29	male	927760	12	farmer	rural	joint	upper lower	BD	depressive	16	0	12	0	3	5	0	7	2	8	6	1
82	29	male	726974	graduate	professional	urban	joint	upper middle	BD	depressive	17	0	10	0	5	2	0	5	2	7	6	3
83	30	male	1254006	12	farmer	rural	joint	upper lower	BD	depressive	16	0	10	3	1	5	1	7	2	8	5	3
84	52	male	1248802	10	farmer	rural	joint	upper lower	BD	depressive	11	0	15	0	3	3	0	6	2	8	5	3
85	32	male	1236477	graduate	professional	urban	joint	upper middle	BD	depressive	18	0	15	0	5	8	2	10	4	6	8	2
86	60	male	446289	10	farmer	urban	nuclear	upper lower	BD	depressive	16	0	14	4	7	10	4	7	4	6	8	2
87	32	male	1187273	12	shopkeeper	urban	joint	upper middle	BD	depressive	17	0	14	2	7	6	0	5	1	6	8	2
88	51	male	36736	up to matric	farmer	rural	joint	lower middle	BD	depressive	12	0	18	3	5	5	0	6	2	10	3	2
89	50	male	175027	up to matric	farmer	rural	joint	lower middle	BD	depressive	12	0	19	2	4	2	0	2	2	10	3	3
90	31	female	77301	10	other	rural	joint	upper lower	BD	depressive	16	0	20	2	2	5	0	6	2	11	2	3

S. No.	Age	Sex	MRD	A negative internal	Q negative external personal	negative external situational	Externalizing bias	personalizing bias	S emotional expressivity	S emotional senstivity	I emotional control	social expressivity	Social Sensitivity	social control	total emotional	total social	expressivity	senstivity	control	TOTAL SSI	equilibruim index
53	35	male	947930	3	10	3	7	0.769230769	51	35	43	51	48	58	129	157	102	83	101	286	45.836668
54	42	male	238925	6	6	4	-3	0.6	37	45	36	39	48	54	118	141	76	93	90	259	45.87689437
55	28	female	62916	2	10	4	3	0.714285714	37	43	40	39	48	54	120	141	76	91	94	261	45.75735931
56	40	male	1260077	2	8	5	6	0.615384615	41	43	36	38	48	54	120	140	79	91	90	260	45.73776272
57	42	male	387768	2	6	8	6	0.428571429	37	43	37	39	44	54	117	137	76	87	91	254	45.89715546
58	60	female	1254991	4	8	4	2	0.666666667	37	28	30	22	50	41	95	113	59	78	71	208	45.81669987
59	35	male	1166428	2	10	4	8	0.714285714	62	53	41	52	29	62	156	143	114	82	103	299	45.77704685
60	51	male	321418	2	10	4	7	0.714285714	62	53	41	52	29	62	156	143	114	82	103	299	45.77704685
61	34	male	787442	0	4	12	12	0.25	48	40	27	35	48	58	115	141	83	88	85	256	45.38119785
62	56	female	454927	0	3	13	9	0.1875	50	35	42	35	51	51	127	137	85	86	93	264	45.23904771
63	36	male	57261	0	15	1	9	0.9375	40	39	47	37	40	51	126	128	77	79	98	254	45.45393943
64	25	male	421916	0	3	13	11	0.1875	48	40	27	35	48	58	115	141	83	88	85	256	45.38119785
65	32	male	144991	1	3	12	11	0.2	48	43	27	35	46	58	118	139	83	89	85	257	45.41742431
66	27	male	963185	1	14	1	9	0.933333333	40	39	42	29	35	46	121	110	69	74	88	231	45.9379808
67	53	male	598571	1	3	12	13	0.2	43	34	45	31	54	48	122	133	74	88	93	255	45.47230743
68	45	male	145530	0	15	1	9	0.9375	41	39	44	34	36	48	124	118	75	75	92	242	45.58411957
69	38	male	125963	0	13	3	10	0.8125	19	38	18	35	55	11	75	101	54	93	29	176	45.54653693
70	60	female	579790	4	12	0	5	1	36	40	39	32	48	44	115	124	68	88	83	239	45.9175171
71	49	male	1206016	0	15	1	9	0.9375	39	39	42	34	36	54	120	124	73	75	96	244	45.5092688
72	48	male	1195183	2	14	0	8	1	44	36	42	31	37	53	122	121	75	73	95	243	45.56528843
73	24	male	1250816	1	2	13	12	0.133333333	40	33	39	28	53	45	112	126	68	86	84	238	45.66026114
74	42	female	122720	1	14	1	9	0.933333333	8	31	10	15	26	10	49	51	23	57	20	100	45.56528843
75	47	male	1201515	2	11	3	7	0.785714286	41	41	44	45	36	47	126	128	86	77	91	254	45.62202482
76	49	male	544206	0	15	1	9	0.9375	11	36	13	17	26	8	60	51	28	62	21	111	45.66026114
77	36	female	1217788	0	3	13	10	0.1875	42	42	38	30	48	44	122	122	72	90	82	244	45.5092688
78	33	female	1188586	1	10	5	7	0.666666667	42	35	42	31	36	53	119	120	73	71	95	239	45.52786405
79	25	male	1243227	1	14	1	6	0.933333333	40	37	39	30	41	48	116	119	70	78	87	235	45.73776272
80	47	female	1188033	1	13	2	7	0.866666667	42	34	39	29	39	47	115	115	71	73	86	230	45.56528843
81	29	male	927760	1	14	1	7	0.933333333	40	37	39	29	41	48	116	118	69	78	87	234	45.54653693
82	29	male	726974	0	12	4	7	0.75	40	35	27	21	47	55	102	123	61	82	82	225	45.64110106
83	30	male	1254006	0	13	3	8	0.8125	44	28	34	30	34	49	106	113	74	62	83	219	45.71825581
84	52	male	1248802	0	13	3	8	0.8125	41	34	29	21	43	49	104	113	62	77	78	217	45.73776272
85	32	male	1236477	2	6	8	4	0.428571429	47	41	12	34	46	50	100	130	81	87	62	230	45.27418437
86	60	male	446289	1	7	8	5	0.466666667	36	40	39	32	48	44	115	124	68	88	83	239	45.9175171
87	32	male	1187273	1	7	8	5	0.466666667	44	37	39	34	39	47	120	120	78	76	86	240	45.60303135
88	51	male	36736	2	11	3	8	0.785714286	43	41	44	41	34	49	128	124	84	75	93	252	45.69883737
89	50	male	175027	4	6	6	6	0.5	48	43	42	35	50	49	133	134	83	93	91	267	45.49075025
90	31	female	77301	0	7	6	11	0.538461538	14	34	8	29	36	10	56	75	43	70	18	131	45.23904771

149
5/1/22

Baba Farid University
of Health Sciences
Sadiq Road
Faridkot-151 203 (Pb). INDIA.
Phone : 01639-256232,256236
Tele/Fax : 01639-256235
Email – Examination@bfuhs.ac.in

No. BFUHS/2K21p-TH/ 20

Date 4/1/2022

The Principal,
DMC, Ludhiana.

Subject: Approval of Plan of Thesis.

This is to inform you that the Faculty of Medical Sciences in its meeting held on 29.10.2021 has approved the plan of thesis of **Gursabeen Kaur**, a student of your college for **M.Phil. (Clinical Psychology)** along with the names of Supervisor/Co-Supervisor as under:-

Topic Plan of Thesis
Study of social cognition, social skills and functional outcomes in patients with bipolar disorder.

Supervisor
Palak Upadhyay, Asst. Prof.,
Dept. of Clinical Psychology,
DMCH, Ludhiana.

Co-Supervisor

Dr. Bholeshwar Prasad Mishra
Prof. & Head,
Dept. of Clinical Psychology,
DMCH, Ludhiana.

Dr. Mitthat Migiani
Asst. Prof.,
Dept. of Psychiatry,
DMCH, Ludhiana.

2016

The student has to submit the four copies of thesis (along with PDF format) , to the Controller of Examinations, BFUHS, Faridkot, at least six months before the commencement of theory examination, if he/she is otherwise eligible to take the examination. He /She must directed to attach a photocopy of this letter with the forwarding letter while submitting thesis to the University along with the letter of approval of University for change of supervisor/Co-Supervisor, change of topic,(if any).

Dr. S P Singh MS(Oph)
Controller of Examinations

Note :

191. If any discrepancy found regarding topic of thesis or Supervisor/Co-Supervisor, inform undersigned within one month after issue of this letter.

192. The student may submit the thesis as per the schedule already conveyed i.e for May/June examination 30th Nov of the preceding the year of examination and for Nov/Dec examinations 31st May of the year of examination.

STUDY OF SOCIAL COGNITION, SOCIAL SKILLS AND FUNCTIONAL OUTCOMES IN PATIENTS WITH BIPOLAR DISORDER

DISSERTATION PROPOSAL

FOR APPROVAL OF SUBJECT OF DISSERTATION TO BE

SUBMITTED

IN PARTIAL FULFILMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

M PHIL.

In

CLINICAL PSYCHOLOGY

OF THE

BABA FARID UNIVERSITY OF HEALTH SCIENCES

FARIDKOT

(July, 2021)

Ms GURSABEEN KAUR
MPhil. Clinical Psychology Student

DEPARTMENT OF CLINICAL PSYCHOLOGY
DAYANAND MEDICAL COLLEGE AND HOSPITAL
LUDHIANA

ABSTRACT OF PLAN OF DISSERTATION

Title	STUDY OF SOCIAL COGNITION, SOCIAL SKILLS AND FUNCTIONAL OUTCOMES IN PATIENTS WITH BIPOLAR DISORDER
For the degree of	M. Phil Clinical Psychology
Name of the candidate	Ms. Gursabeen Kaur
Supervisor	Palak Upadhyay, Assistant Professor, Department of Clinical Psychology, DMCH, Ludhiana
Co-supervisor	Dr. Bholeshwar Prasad Mishra, Professor & Head, Department of Clinical Psychology, DMCH, Ludhiana Dr. Mitthat Miglani Assistant Professor, Department of Psychiatry , DMCH, Ludhiana
Institution	Dayanand Medical College & Hospital, Ludhiana
University	Baba Farid University of Health Sciences, Faridkot

Introduction: Bipolar disorder (BD) is a debilitating mental illness. The recurrent mood disturbance, lingering residual symptoms between episodes, hospitalizations and disrupted cognitive processing interfere with the functioning of the individual. Given the debilitating effects of bipolar disorder patients are likely to experience restrictions in their social interactions and social networks. Even when in remission, patients with bipolar disorder can present social skills deficits. Present study aims to study social cognition (theory of mind and attributional style), social skills and functional outcomes across all the 3 phases of bipolar disorder (depressive phase, manic phase and remission phase).

Aim of Study: 1) To evaluate and compare theory of mind, attributional style, social skills and functional outcome across different phases of Bipolar Disorder 2) To evaluate the relationship between social skills, social cognition and functioning in Bipolar disorder

Materials & methods: The study will be conducted on 90 bipolar patients (30 in remission phase, 30 in depressive phase and 30 in manic phase) where the diagnosis will be established as per DSM 5 criteria, referred by the department of psychiatry. Informed consent will be taken. Socio-demographic Proforma will be filled containing the basic information about the patient and the subjects will be evaluated on the HDRS, YMRS Revised Reading the Mind in the Eyes task, IPSAQ, Functioning Assessment Short Test and Social Skills Inventory. The data will be assessed using appropriate statistical package.

Clinical Significance: The findings would help in more efficient planning of therapeutic interventions and rehabilitation programmes for bipolar patients. It will also aid in highlighting the specific target areas to improve social skills functioning. Timely intervention will help to prevent further deficits and impairments in psychological and social functioning so that the quality of life is not compromised.

Keywords: Bipolar disorder, social cognition, social skills, social functioning, Theory of Mind, attributional style

(Signature)	(Signature)	(Signature)	(Signature)	(Signature)
Candidate	Co-supervisor	Co-supervisor	Supervisor	Principal

CERTIFICATE OF FACILITIES AVAILABLE

This is to certify that the facilities for work on the subject of dissertation titled **"STUDY OF SOCIAL COGNITION, SOCIAL SKILLS AND FUNCTIONAL OUTCOMES IN PATIENTS WITH BIPOLAR DISORDER"** exist in the Department of Clinical Psychology, DMC&H, Ludhiana and will be provided to the candidate. We will see that the data being included in the dissertation is genuine and is collected by the candidate herself under our supervision and guidance.

Supervisor

Palak Upadhyay
Assistant Professor
Department of Clinical Psychology
DMCH, Ludhiana

Co-Supervisors

Dr. Bholeshwar Prasad Mishra
Professor & Head
Department of Clinical Psychology
DMCH, Ludhiana

Dr. Mitthat Miglani
Assistant Professor
Department of Psychiatry
DMCH, Ludhiana

Head of the Department

Dr. Bholeshwar Prasad Mishra
Professor & Head
Department of Clinical Psychology
DMCH, Ludhiana

Place: LUDHIANA

Date: 21.07.2021

APPROVAL PROFORMA
BY RESEARCH & ETHICAL COMMITTEE
DAYANAND MEDICALCOLLEGE& HOSPITAL, LUDHIANA

Name of candidate	Ms GURSABEEN KAUR
Department	Clinical Psychology
Topic of Dissertation	**STUDY OF SOCIAL COGNITION, SOCIAL SKILLS AND FUNCTIONAL OUTCOMES IN PATIENTS WITH BIPOLAR DISORDER**
Likely date of appearing in PG examination	May- June 2022
Date of enrollment	26.10.2020
Name of Head of Department	Dr.Bholeshwar Prasad Mishra
1) Supervisor **2) Co-Supervisor(s)**	Palak Upadhyay Dr. Bholeshwar Prasad Mishra Dr. Mitthat Miglani
Signature of Members of Research Committee with Stamp	**Signature of Members of Ethics Committee with Stamp**
Dr. Harpreet Kaur (Professor & Head, Pathology)	Mr. R K Sharma (Legal Expert)
Dr. Jaspal Singh (Professor & Head, Surgery)	Dr. Ramit Mahajan (Associate Professor, Gastroenterology)
Dr. Dinesh Gupta (Professor & Head, Medicine)	Dr. Anu Sharma (Professor, Anatomy)
Dr. Sandeep Kaushal (Dean Academics & Professor & Head, Pharmacology)	Dr. Sandeep Kaushal (Dean Academics & Professor & Head, Pharmacology)
Dr. Gurpreet S Wander (Vice Principal)	Dr. Gurpreet S Wander (Vice Principal & Professor & Head, Cardiology)
	Dr. Gagandeep Singh (Secretary, Ethics Committee Professor & Head, Neurology)

Approved: Yes / No

Dr. Sandeep Puri
Chairperson
Research Committee

Approved: Yes / No

Prof. Arvind Malhotra
Chairperson
Ethics Committee

BABA FARID UNIVERSITY OF HEALTH SCIENCES, FARIDKOT

PROFORMA FOR REGISTRATION OF SUBJECT FOR DISSERTATION

1	NAME OF THE CANDIDATE AND ADDRESS	Ms GURSABEEN KAUR B.R.S. NAGAR, LUDHIANA, PUNJAB 141001
2	NAME OF THE INSTITUTE	DAYANAND MEDICAL COLLEGE AND HOSPITAL, LUDHIANA
3	COURSE OF STUDY AND SUBJECT	M PHIL CLINICAL PSYCHOLOGY
4	DATE OF ADMISSION OF COURSE	26.10.2020
5	TITLE OF THE TOPIC	STUDY OF SOCIAL COGNITION, SOCIAL SKILLS AND FUNCTIONAL OUTCOMES IN PATIENTS WITH BIPOLAR DISORDER

6. BRIEF RESUME OF THE INTENDED WORK

6.1 NEED FOR THE STUDY

Bipolar disorder (BD) is a chronic and disabling mental illness characterized by recurrent mood episodes, with periods of depressive symptomatology or manic symptomatology as well as periods of remission of mood symptoms. It has been ranked as one of the 20 leading medical causes of disability. According to National Mental Health Survey[1] the lifetime prevalence of bipolar disorder in India is 2.6–7.8. In a national representative sample, one in every four persons diagnosed with bipolar I disorder reported a suicide attempt.[2] Relapse rate remains high despite available treatments and about two-thirds of patients do not return to work. The recurrent mood disturbance, lingering residual symptoms between episodes, hospitalizations and disrupted cognitive processing interfere with the functioning of the individual. The functional impairment covers multiple domains, including functioning at work, interpersonal and social functioning and is present even in the remission phase. In general, symptoms of depression have been found to account for more variance in psychosocial impairment as compared to the symptoms of mania.[3]

Recent research implies a moderate impairment in cognitive functioning in bipolar disorder, with coexisting social cognitive deficit.[4] These functions deteriorate over the course of the disorder. Despite the rapid growth in scientific research on cognitive aspects of mood disorders over the past years, there is a large knowledge gap concerning social cognition in BD.

The National Institute of Mental Health (NIMH).[5] defined Social cognition as the mental operations that underlie social interactions, including perceiving, interpreting, and generating responses to the intentions, dispositions, and behaviours of others. Social cognition encompasses a broad range of domains, including social perception, emotion recognition, theory of mind, and attribution.

Social perception has been defined as decoding and interpreting the social cues and the ability to integrate contextual information and social

knowledge into judgments about other's behaviours. Emotional recognition refers to the ability to perceive and use emotional information. Further, it is a central component of nonverbal communication and utilizes the principles of recognition of changes in facial expression, eye contact, body posture, and movement.[6]

Theory of mind (ToM) depicts the capacity to understand the mental states of other's and to differentiate it from one's own mental state. Patients with impaired ToM may have difficulty understanding the impact of their behaviour on others. This may contribute to their willingness to indulge in reckless behavior or dangerous activities.

Attributional style refers to the manner in which individuals interpret, explain, or make sense of the positive and negative social events encountered in life and is thought to have a significant impact on their behaviors.[7]

Therefore, Social cognition is the aspect that is dedicated to processing social information for adaptive functioning. Given the debilitating effects of bipolar disorder patients are likely to experience restrictions in their social interactions and social networks as compared to healthy individuals. There is an increased interest among research community in utilizing a social cognitive framework to understand the mechanisms underlying social impairment among patients with neuropsychiatric disorders.

Recent evidence[8] suggests that part of the psychosocial impairment experienced by patients in Bipolar Disorder is related to poor social skills. According to Perez et al.[9] social skills are culturally normative or socially sanctioned interpersonal behaviours that accurately communicate the emotions and needs of the individual in order to facilitate the achievement of interpersonal goals.

Psychiatric patients often present with deficits in social functioning. Even when in remission, patients with bipolar disorder can present social skills deficits. Deficits in these abilities are typically associated with difficulties

and conflicts in interpersonal relationships, lower quality of life, and social isolation.

Goldstein et al.[10] in their study found that adolescents with bipolar disorder lag behind their peers in social performance but not in knowledge of social skills. Difficulties in controlling emotions can interfere with the consistent exhibition of appropriate social behaviours. Perez et al.[9] showed that, in addition to deficits in social functioning, imbalances in social skills are significant indicators of clinical distress in individuals with mood disorder. The assessment of social skills is important considering their effect on the quality of life of the individuals with psychiatric disorder.

Bipolar individuals with impaired social cognition and social skills may get involved in stressful social events more often due to their inability to read what is happening, to weigh the risks involved in a social situation, or to take the right decision deriving from it. Hence, this enhanced likelihood for negative life events would trigger many episodes of the illness and, finally, worsen the course of the disorder. This would deteriorate the functional outcome of the patient. From a psychological treatment perspective, timely assessment would help in early implementation of psychoeducational programs and rehabilitation services.

Although research in social cognition underlying mood disorders has been ongoing since the past decade, there is still much to explore. There is a research gap in the studies on relationship between social cognition and social skills. Also, most of these researches have been conducted in western countries. The differences in family and social structure across cultures, will have an impact on the relationships and measures of social cognition, social skills and the functioning across bipolar disorder. Thus, this study aims to study the above aspects namely social cognition (theory of mind and attributional style), social skills and functional outcomes across all the 3 phases of bipolar disorder (depressive phase, manic phase and remission phase).

6.2 REVIEW OF LITERATURE

Bipolar disorder (BD) is a common psychiatric illness. The severity and duration of episodes, signs and outcomes vary considerably in the individuals. The debilitating condition is associated with long-lasting and persistent impairment. Patients with BD have fewer social interactions and more restricted social networks as compared to healthy individuals.

Most BD patients exhibit neurocognitive dysfunction which are present even during remission period, with more pronounced effects in those with a more severe or chronic symptomology presentation. Specific cognitive deficits are observed in euthymic BD patients such as verbal memory and speed of information processing. Cognitive performances (executive function, verbal learning and memory, attention, processing speed) have been associated with patients' level of functioning. One aspect of cognition that is particularly worth exploring is social cognition. Social cognition, contributes to a person's ability to comprehend and respond appropriately to the thoughts and feelings of others.[11] Social cognition comprises of four aspects or dimensions namely: theory of mind, emotional processing, attributional styles and social perception. Impairment in social cognition may contribute to the alterations in interpersonal, social and occupational functioning that are experienced by people with BD.

Theory of Mind (ToM) is one of the most complex aspects of social cognition. It is the ability to infer mental states of self and others with respect to thought, emotion and intention. Therefore, it is an essential skill for social development and interactions. Because of its importance this construct of social cognition has been widely studied. It has been associated with various psychiatric conditions such as schizophrenia but there is a dearth of literature with respect to bipolar disorder.

Inoue et al.[12] in their study titled "Deficiency of theory of mind in patients with remitted mood disorder" reported deficits in a combined sample of remitted patients with unipolar and bipolar depression on cognitively challenging ToM tasks. The deficits were observed on ToM task involving

integrating and understanding the perspective of two characters simultaneously (i.e., second-order false-belief questions). No significant difference was found on less challenging ToM tests that involved inferring the perspective of a single character. Kerr et al.[13] in their study reported deficits on both first and second-order ToM tests in bipolar patients who were actively depressed or manic; remitted patients, however, were unimpaired. Montag et al.[14] identified a ToM deficit in euthymic bipolar patients through a realistic video-based examination, concluding that social cognition may have an impact on the development of the illness. In a study conducted by Purcell et al.[15] in an exploratory analysis revealed that lower Reading the Mind in the Eyes test response predicted greater overall life functioning difficulties within the home duties and work duties subscales for the BD group.

Attributional style is another key domain of social cognition but has been comparatively less explored. It refers to the situation where the cause about the occurrence of positive and negative events is attributed to internal (personal), external (other person), or situational factors by an individual. Although normal attributional biases exist in healthy individuals, extreme or dysfunctional attributional biases are thought to be tied to certain psychopathological conditions. In a study by Lyon et al.[16] in their study on attributions in bipolar patients found that patients in depressive phase and in remission attributed negative events more than positive events to self. Also, the bipolar-depressed patients made excessively global and stable attributions for negative events.

Lahera et al.[17] in their study found that patients with BD had significantly impaired attributional styles. Bipolar patients with depressive symptoms had hostile intent attribution and blame attribution. Significant relation was found between HDRS score and hostility attributional style to global functioning. the study also found deficits in ToM in bipolar patients which was related to deterioration in social functioning. Sweeney and Bailey[18] in their metanalytic review of attributional style in depression found a

tendency to generate pessimistic attributions (internal, stable, and global) for negative events in depressed patients. Scott and Pope[19] conducted a cross sectional comparison with 77 bipolar patients and found that hypomanic patients reported significantly higher dysfunctional attitudes than remitted patients but significantly lower than depressed patients.

A study by Cusi et al.[20] focusing on social perception found that the BD group performed significantly more poorly as compared to healthy controls, suggesting that individuals with BD make impaired judgments about everyday social situations. The BD group scored lower than controls on the IPT-15 Kinship and Competition subscales.

A study by Malhi et al.[21] assessing a smaller number of affect expressions in remitted patients found delayed response times for the recognition of fear, disgust and happiness.

Patients with BD because of associated affective disturbances may experience impairment in their social, occupational and social functioning. Research on the relationship between social cognition deficits and social functioning has yielded various results. In a review conducted by MacQueen, Young and Joffe[22] 30-60% of patients with BD were unable to return to full functioning. Lahera et al.[23] in a study on social cognition in bipolar patients found that low-functioning (FAST score 411) euthymic BD patients showed a significant impairment in Faux pas and emotion recognition compared to a high-functioning (FAST score 11) bipolar group.

In a comparative study carried out by Mehta, Kumar Mittal and Kumar Swami[24], patients with BD in a depressive phase of illness were compared to individuals with MDD, currently experiencing a major depressive episode. Variables such as occupation, household work, interpersonal social functioning, life satisfaction, leisure and global psychosocial functioning were considered. Although both groups experienced impairment, individuals with BD were significantly more impaired in the domain of global psychosocial functioning.

Martino et al.[25] in a study found that psychosocial functioning as assessed with the GAF correlated positively with performance on facial recognition of disgust and fear in BD patients, albeit these social cognitive variables were not independent predictors of functional outcome. The functional impairment appears to persist into remission phase. Using the Work and Social Adjustment Scale (WSAS), Fagiolini et al.[26] investigated the overall functioning of euthymic people with BD; scores on the WSAS in euthymic patients revealed significant functional impairment relative to healthy individuals.

Cusi and colleagues[20] examined interpersonal functioning in individuals with BD using Reading the Mind in the Eyes Test. The results showed impairment in the BD group as compared to the healthy controls. Furthermore, deficits on the social judgment task were associated with impairment in psychosocial functioning.

Studies have also evaluated social skills in individuals with bipolar disorder. Social skills include a set of behaviours related to interpersonal skills, interpersonal competence and communication competence. Goldstein et al.[10] showed that adolescents with bipolar disorder lag behind their peers in social performance but not in knowledge of social skills. The authors stated that difficulties in controlling emotions can interfere with the consistent exhibition of appropriate social behaviours. Perez et al.[9] in their study using social akills inventory(SSI) showed that, in addition to deficits in social functioning, imbalances in social skills are significant indicators of clinical distress in individuals with mood disorder.

In a study involving patients with bipolar disorder, Scott et al.[27] analysed dysfunctional attitudes that could influence psychosocial adjustment and reported that patients with bipolar disorder presented higher levels of perfectionism, a greater need for approval, a greater over-general recall on autobiographic memory and were less capable in social problem-solving tasks.

Rocca et al.[28] in their study reported that BD patients had deficits in their social skills particularly in their conversational skills. They are more cautious in initiating and maintaining social contact. The findings also reported difficulties experienced by BD patients in their capacity to cope with neutral or adverse social situations.

Together, these findings suggest that impairment in social cognition and social skills may contribute to the alternations in functioning, particularly interpersonal and social functioning, which are experienced by people with BD.

6.3 AIMS AND OBJECTIVES OF THE STUDY

1. To evaluate and compare theory of mind across different phases of bipolar disorder
2. To evaluate and compare attributional style across different phases of bipolar disorder
3. To evaluate and compare functional outcome across the phases of bipolar disorder
4. To evaluate and compare social skills across the phases of bipolar disorder
5. To evaluate the relationship between social skills, theory of mind, attributional style and functioning in bipolar disorder

7. MATERIALS AND METHODS

7.1 SOURCE OF DATA

Study will be conducted on 90 bipolar patients (30 in remission phase, 30 with depressive phase and 30 with manic phase) patients, admitted in psychiatry ward or visiting psychiatry OPD at Dayanand Medical College and Hospital.

7.2 METHOD OF COLLECTION OF DATA

Design: cross sectional study.

Sample size: 90 bipolar patients (30 in remission phase, 30 with depressive episode and 30 with manic episode)

Sample design: Purposive sampling design will be used. The respondents who meet the inclusion criteria will be selected for the study.

INCLUSION CRITERIA (Remission Phase)

- Diagnosis of bipolar disorder according to DSM 5
- Age group between 18 to 60 years.
- Male/ Female participant
- HDRS <7 & YMRS < 12
- Patients willing to give informed consent.

EXCLUSION CRITERIA (Remission Phase)

- Any other psychiatry comorbidity
- History of intellectual disability
- Major neurological disorder or communication disorder
- History of substance use disorder except tobacco use

INCLUSION CRITERIA (Depressive Phase)

- Diagnosis according to DSM 5
- Age group between 18 to 60 years.
- Male/ Female participant
- HDRS >7
- Patients willing to give informed consent.

EXCLUSION CRITERIA (Depressive Phase)

- Any other psychiatry comorbidity
- History of intellectual disability
- Major neurological disorder or communication disorder
- History of substance use disorder except tobacco use

INCLUSION CRITERIA (Manic Phase)

- Diagnosis according to DSM 5
- Age group between 18 to 60 years.
- Male/ Female participant
- YMRS > 12
- Patients willing to give informed consent.

EXCLUSION CRITERIA (Manic Phase)

- Any other psychiatry comorbidity
- History of intellectual disability
- Major neurological disorder or communication disorder
- History of substance use disorder except tobacco use

DESCRIPTION OF THE TOOLS:

1. **Hamilton Depression Rating Scale (HDRS)**[29]: The HDRS is the most widely used clinician-administered depression assessment scale. It yields a severity score from 0 to 63 on 17 items. Eight items are scored on a 5-point scale, ranging from 0 = not present to 4 = severe. Nine items are scored from 0–2. Scores of 0–7 are considered as being normal, 8–16 suggest mild depression, 17–23 moderate depression and scores over 24 are indicative of severe depression. Test- Retest reliability for the Hamilton depression scale ranged from 0.81 to 0.98.

2. **Young Mania Rating Scale (YMRS)**[30]: The YMRS is an 11- item, clinician-rated measure of current manic symptoms. The YMRS total

score ranges from 0 to 60 where higher scores indicate more severe mania, thus, a negative change (or decrease) from baseline indicates a reduction (or improvement) in manic symptoms. Total score ≤12 indicates remission (13-19=minimal symptoms; 20-25=mild mania, 26-37=moderate mania, 38-60=severe mania).

3. **Revised reading the mind in the eyes task (RMET):** One of the most used ToM tasks assesses the capacity to evaluate other mental states by watching the ocular region of faces. This task consists in 36 pictures of the ocular region of varying unknown people and the subject must choose one out of four options that best describes the mental state observed. RMET performance scores are calculated as the sum of the number of correct answers (i.e., a higher score depicts better performance on the RMET). The test-retest reliability ranges from 0.75 to 0.95.[31]

4. **Internal, Personal and Situational Attribute Questionnaire (IPSAQ) (Peter Kinderman and Prof. Richard P. Bentall).** The IPSAQ consists of 32 items which describe positive and negative social situations. For each item, participants are asked to state the most likely cause for the event, and then indicate whether that cause is due primarily to self (internal attributions), other people (personal attributions) or circumstances (situational attributions). The IPSAQ scales have adequate reliability (externalizing bias alpha = 0.7189, personalizing bias alpha = 0.7609).[32]

5. **Functioning Assessment Short Test (FAST):** It is a clinician-rated, short assessment tool. The 24 items of the scale are divided among six specific areas of functioning: autonomy, occupational functioning, cognitive functioning, financial issues, interpersonal relationships, and leisure time. It has an internal consistency reliability of 0.9.[33]

6. **Social Skills Inventory (SSI)**: It is a 90-item scale which assesses 6 basic social skills that underlie social competence. It evaluates verbal (social) and non-verbal (emotional) communication skills and identifies strengths and weaknesses. Cronbach's alpha coefficients for the SSI scales range from .65 to .88 (M = .73) for the adult sample.[34]

METHODOLOGY

The study will be conducted on 90 bipolar patients (30 in remission phase, 30 with depressive phase and 30 with manic phase) where the diagnosis will be established as per DSM 5 criteria, referred by the department of psychiatry. Informed consent will be taken. Socio-demographic Proforma will be filled containing the basic information about the patient and the subjects will be evaluated on Hamilton Depression Rating Scale (HDRS), Young Mania Rating Scale (YMRS), Revised Reading the Mind in the Eyes task (RMET), Internal, Personal and Situational Attribute Questionnaire (IPSAQ), Functioning Assessment Short Test (FAST) and Social Skills Inventory (SSI). The data will be assessed using appropriate statistical package.

OUTCOME

The present study would help us to assess theory of mind and attributional style across the 3 phases of Bipolar disorder and its relationship with different domains of functioning. The study will also assist in evaluating the relationship between social skills and theory of mind and attributional style in the population mentioned above. The findings of the present study would aid to enrich the existing fund of knowledge regarding this important domain. Direct and practical implications of the findings would help in more efficient planning of rehabilitation programmes for bipolar patients. It will also aid in highlighting the specific target areas to improve social skills functioning. Thus, early detection and timely intervention will help to prevent further deficits and impairments in psychological and social functioning so that the quality of life is not compromised.

STATISTICAL ANALYSIS

Data will be described in terms of range; mean ±standard deviation (± SD), median, frequencies (number of cases) and relative frequencies (percentages) as appropriate. Comparison of quantitative variables between the study groups will be done using ANOVA. For comparing categorical data, Chi square ($\chi 2$) test will be performed and exact test was used when the expected frequency is less than 5. A probability value (p value)less than 0.05 will be considered statistically significant. All statistical calculations will be done using (Statistical Package for the Social Science) SPSS 21version (SPSS Inc., Chicago, IL, USA) statistical program for Microsoft Windows.

7.3 DOES THE STUDY REQUIRE ANY INVESTIGATIONS OR INTERVENTIONS TO BE CONDUCTED ON PATIENTS OR OTHER HUMANS OR ANIMALS? IF SO, PLEASE DESCRIBE BRIEFLY.

NO

7.4 HAS ETHICAL CLEARENCE BEEN OBTAINED FROM YOUR INSTITUTION IN CASE OF 7.3?

Yes attached herewith

8.0 REFERENCES:

1. Murthy RS. National Mental Health Survey of India 2015–2016. Indian J Psychiatry. 2017;59(1):21–6.
2. Merikangas KR, Jin R, He J-P, Kessler RC, Lee S, Sampson NA, et al. Prevalence and Correlates of Bipolar Spectrum Disorder in the World Mental Health Survey Initiative. Arch Gen Psychiatry. 2011;68(3):241–51.
3. Simon GE, Bauer MS, Ludman EJ, Operskalski BH, Unützer J. Mood symptoms, functional impairment, and disability in people with bipolar disorder: specific effects of mania and depression. J Clin Psychiatry. 2007;68(8):1237-45.
4. Thomas J, Knowles R, Tai S, Bentall RP. Response styles to depressed mood in bipolar affective disorder. J Affect Disord. 2007;100(1):249–52.
5. Green MF, Penn DL, Bentall R, Carpenter WT, Gaebel W, Gur RC, et al. Social Cognition in Schizophrenia: An NIMH Workshop on Definitions, Assessment, and Research Opportunities. Schizophr Bull. 2008;34(6):1211–20.
6. Fiske ST, Taylor SE. Social cognition. New York: McGraw-Hill; 1991.
7. Baron RA, Branscombe NR. Social Psychology. Pearson; 2012. 509 p.
8. Rocca CC de A, Heuvel E van den, Caetano SC, Lafer B. Facial emotion recognition in bipolar disorder: a critical review. Rev Bras Psiquiatr Sao Paulo Braz 1999. 2009;31(2):171–80.
9. Perez JE, Riggio RE, Kopelowicz A. Social skill imbalances in mood disorders and schizophrenia. Personal Individ Differ. 2007;42(1):27–36.
10. Goldstein TR, Miklowitz DJ, Mullen KL. Social skills knowledge and performance among adolescents with bipolar disorder. Bipolar Disord. 2006;8(4):350–61.

11. Cusi AM, Nazarov A, Holshausen K, Macqueen GM, McKinnon MC. Systematic review of the neural basis of social cognition in patients with mood disorders. J Psychiatry Neurosci JPN. 2012;37(3):154–69.
12. Inoue Y, Tonooka Y, Yamada K, Kanba S. Deficiency of theory of mind in patients with remitted mood disorder. J Affect Disord. 2004;82(3):403–9.
13. Kerr N, Dunbar RIM, Bentall RP. Theory of mind deficits in bipolar affective disorder. J Affect Disord. 2003;73(3):253–9.
14. Montag C, Ehrlich A, Neuhaus K, Dziobek I, Heekeren H, Heinz A, et al. Theory of mind impairments in euthymic bipolar patients. J Affect Disord. 2009;123:264–9.
15. Purcell AL, Phillips M, Gruber J. In your eyes: does theory of mind predict impaired life functioning in bipolar disorder? J Affect Disord. 2013;151(3):1113–9.
16. Lyon HM, Startup M, Bentall RP. Social cognition and the manic defense: attributions, selective attention, and self-schema in bipolar affective disorder. J Abnorm Psychol. 1999;108(2):273–82.
17. Lahera G, Herrera S, Reinares M, Benito A, Rullas M, González-Cases J, et al. Hostile attributions in bipolar disorder and schizophrenia contribute to poor social functioning. Acta Psychiatr Scand. 2015;131(6):472–82.
18. Sweeney PD, Anderson K, Bailey S. Attributional style in depression: a meta-analytic review. J Pers Soc Psychol. 1986 May;50(5):974–91.
19. Scott J, Pope M. Cognitive styles in individuals with bipolar disorders. Psychol Med. 2003;33(6):1081–8.
20. Cusi AM, Macqueen GM, McKinnon MC. Patients with bipolar disorder show impaired performance on complex tests of social cognition. Psychiatry Res. 2012;200(2–3):258–64.
21. Malhi GS, Lagopoulos J, Sachdev PS, Ivanovski B, Shnier R, Ketter T. Is a lack of disgust something to fear? A functional magnetic

resonance imaging facial emotion recognition study in euthymic bipolar disorder patients. Bipolar Disord. 2007;9(4):345–57.

22. MacQueen GM, Young LT, Joffe RT. A review of psychosocial outcome in patients with bipolar disorder. Acta Psychiatr Scand. 2001;103(3):163–70.
23. Lahera G, Ruiz-Murugarren S, Iglesias P, Ruiz-Bennasar C, Herrería E, Montes JM, et al. Social cognition and global functioning in bipolar disorder. J Nerv Ment Dis. 2012;200(2):135–41.
24. Mehta S, Mittal PK, Swami MK. Psychosocial Functioning in Depressive Patients: A Comparative Study between Major Depressive Disorder and Bipolar Affective Disorder. Depress Res Treat [Internet]. 2014 [cited 2021 Feb 25];2014. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3972948/
25. Martino DJ, Strejilevich SA, Scápola M, Igoa A, Marengo E, Ais ED, et al. Heterogeneity in cognitive functioning among patients with bipolar disorder. J Affect Disord. 2008;109(1–2):149–56.
26. Fagiolini A, Kupfer DJ, Masalehdan A, Scott JA, Houck PR, Frank E. Functional impairment in the remission phase of bipolar disorder. Bipolar Disord. 2005;7(3):281–5.
27. Scott J, Stanton B, Garland A, Ferrier IN. Cognitive vulnerability in patients with bipolar disorder. Psychol Med. 2000;30(2):467–72.
28. Castanho de Almeida Rocca C, Britto de Macedo-Soares M, Gorenstein C, Sayuri Tamada R, Kluger Issler C, Silva Dias R, et al. Social Dysfunction in Bipolar Disorder: Pilot Study. Aust N Z J Psychiatry. 2008;42(8):686–92.
29. Hamilton M. A rating scale for depression. J Neurol Neurosurg Psychiatry. 1960;23:56–62.
30. Young RC, Biggs JT, Ziegler VE, Meyer DA. A rating scale for mania: reliability, validity and sensitivity. Br J Psychiatry J Ment Sci. 1978;133:429–35.

31. Baron-Cohen S, Wheelwright S, Hill J, Raste Y, Plumb I. The “Reading the Mind in the Eyes” Test revised version: a study with normal adults, and adults with Asperger syndrome or high-functioning autism. J Child Psychol Psychiatry. 2001;42(2):241–51.
32. Kinderman P, Bentall RP. A new measure of causal locus: the internal, personal and situational attributions questionnaire. Personal Individ Differ. 1996;20(2):261–4.
33. Rosa AR, Sánchez-Moreno J, Martínez-Aran A, Salamero M, Torrent C, Reinares M, et al. Validity and reliability of the Functioning Assessment Short Test (FAST) in bipolar disorder. Clinical Practice and Epidemiology in Mental Health. 2007;3(1):1-8.
34. Riggio RE. Social skills inventory: manual. Consulting Psychologists Press; 1989. 21 p.

APPENDIX A

SOCIO-DEMOGRAPHIC PROFORMA

S.NO: - **Date:**

1. NAME:

2. AGE:

3. SEX: - Male/ Female

4. MRD.NO: -

5. Education-

a) Illiterate b) Up to Matric
c) 10th d) 12th e) Graduate f) Post graduate

6. Occupation-

a) Farmer/Clerical/Shopkeeper b) Semi-skilled/skilled worker
c) Unemployed d) Other
e) Professional f) Student

7. Address- a) Urban b) Rural

8. Contact no.-

9. Family Type- a) Nuclear b) Joint

10. Monthly income of the family

A) >52,734
B) 26,335-52,733
C) 19,759-26,354
D) 13,161- 19,758
E) 7,887-13,160
F) 2,641-7,886
G) <2,640

11. Socio economic status

A) Upper
B) Upper middle
C) Lower middle
D) Upper lower
E) Lower

12. Diagnosis:

13. Phase of Disorder:

SIGNATURE OF CANDIDATE **SIGNATURE OF SUPERVISOR**

14: scales:

A. HDRS SCORE

B. YMRS SCORE

C. IPSAQ SCORE

Negative: Positive:

D. Revised reading the mind in the eyes task SCORE

E. Functioning Assessment Short Test SCORE

1. AUTONOMY
2. OCCUPATIONAL FUNCTIONING
3. COGNITIVE FUNCTIONING
4. FINANCIAL ISSUES
5. INTERPERSONAL RELATIONSHIPS
6. LEISURE TIME

F. Social skills Inventory SCORE

1. Emotional Expressivity
2. Emotional Sensitivity
3. Emotional Control
4. Social Expressivity
5. Social Sensitivity
6. Social Control

CONTACT NO.

SIGNATURE OF CANDIDATE **SIGNATURE OF SUPERVISOR**

APPENDIX B

Hamilton Depression Rating Scale (HDRS)

PLEASE COMPLETE THE SCALE BASED ON A STRUCTURED INTERVIEW

Instructions: for each item select the one "cue" which best characterizes the patient. Be sure to record the answers in the appropriate spaces (positions 0 through 4).

1 DEPRESSED MOOD (sadness, hopeless, helpless, worthless)
- 0 [ ] Absent.
- 1 [ ] These feeling states indicated only on questioning.
- 2 [ ] These feeling states spontaneously reported verbally.
- 3 [ ] Communicates feeling states non-verbally, i.e. through facial expression, posture, voice and tendency to weep.
- 4 [ ] Patient reports virtually only these feeling states in his/her spontaneous verbal and non-verbal communication.

2 FEELINGS OF GUILT
- 0 [ ] Absent.
- 1 [ ] Self reproach, feels he/she has let people down.
- 2 [ ] Ideas of guilt or rumination over past errors or sinful deeds.
- 3 [ ] Present illness is a punishment. Delusions of guilt.
- 4 [ ] Hears accusatory or denunciatory voices and/or experiences threatening visual hallucinations.

3 SUICIDE
- 0 [ ] Absent.
- 1 [ ] Feels life is not worth living.
- 2 [ ] Wishes he/she were dead or any thoughts of possible death to self.
- 3 [ ] Ideas or gestures of suicide.
- 4 [ ] Attempts at suicide (any serious attempt rate 4).

4 INSOMNIA: EARLY IN THE NIGHT
- 0 [ ] No difficulty falling asleep.
- 1 [ ] Complains of occasional difficulty falling asleep, i.e. more than ½ hour.
- 2 [ ] Complains of nightly difficulty falling asleep.

5 INSOMNIA: MIDDLE OF THE NIGHT
- 0 [ ] No difficulty.
- 1 [ ] Patient complains of being restless and disturbed during the night.
- 2 [ ] Waking during the night – any getting out of bed rates 2 (except for purposes of voiding).

6 INSOMNIA: EARLY HOURS OF THE MORNING
- 0 [ ] No difficulty.
- 1 [ ] Waking in early hours of the morning but goes back to sleep.
- 2 [ ] Unable to fall asleep again if he/she gets out of bed.

7 WORK AND ACTIVITIES
- 0 [ ] No difficulty.
- 1 [ ] Thoughts and feelings of incapacity, fatigue or weakness related to activities, work or hobbies.
- 2 [ ] Loss of interest in activity, hobbies or work – either directly reported by the patient or indirect in listlessness, indecision and vacillation (feels he/she has to push self to work or activities).
- 3 [ ] Decrease in actual time spent in activities or decrease in productivity. Rate 3 if the patient does not spend at least three hours a day in activities (job or hobbies) excluding routine chores.
- 4 [ ] Stopped working because of present illness. Rate 4 if patient engages in no activities except routine chores, or if patient fails to perform routine chores unassisted.

8 RETARDATION (slowness of thought and speech, impaired ability to concentrate, decreased motor activity)
- 0 [ ] Normal speech and thought.
- 1 [ ] Slight retardation during the interview.
- 2 [ ] Obvious retardation during the interview.
- 3 [ ] Interview difficult.
- 4 [ ] Complete stupor.

9 AGITATION
- 0 [ ] None.
- 1 [ ] Fidgetiness.
- 2 [ ] Playing with hands, hair, etc.
- 3 [ ] Moving about, can't sit still.
- 4 [ ] Hand wringing, nail biting, hair-pulling, biting of lips.

10 ANXIETY PSYCHIC
- 0 [ ] No difficulty.
- 1 [ ] Subjective tension and irritability.
- 2 [ ] Worrying about minor matters.
- 3 [ ] Apprehensive attitude apparent in face or speech.
- 4 [ ] Fears expressed without questioning.

11 ANXIETY SOMATIC (physiological concomitants of anxiety) such as:
gastro-intestinal – dry mouth, wind, indigestion, diarrhea, cramps, belching
cardio-vascular – palpitations, headaches
respiratory – hyperventilation, sighing
urinary frequency
sweating
- 0 [ ] Absent.
- 1 [ ] Mild.
- 2 [ ] Moderate.
- 3 [ ] Severe.
- 4 [ ] Incapacitating.

12 SOMATIC SYMPTOMS GASTRO-INTESTINAL
- 0 [ ] None.
- 1 [ ] Loss of appetite but eating without staff encouragement. Heavy feelings in abdomen.
- 2 [ ] Difficulty eating without staff urging. Requests or requires laxatives or medication for bowels or medication for gastro-intestinal symptoms.

13 GENERAL SOMATIC SYMPTOMS
- 0 [ ] None.
- 1 [ ] Heaviness in limbs, back or head. Backaches, headaches, muscle aches. Loss of energy and fatigability.
- 2 [ ] Any clear-cut symptom rates 2.

14 GENITAL SYMPTOMS (symptoms such as loss of libido, menstrual disturbances)
- 0 [ ] Absent.
- 1 [ ] Mild.
- 2 [ ] Severe.

15 HYPOCHONDRIASIS
- 0 [ ] Not present.
- 1 [ ] Self-absorption (bodily).
- 2 [ ] Preoccupation with health.
- 3 [ ] Frequent complaints, requests for help, etc.
- 4 [ ] Hypochondriacal delusions.

16 LOSS OF WEIGHT *(RATE EITHER a OR b)*

a) According to the patient:	b) According to weekly measurements:
0 [ ] No weight loss.	0 [ ] Less than 1 lb weight loss in week.
1 [ ] Probable weight loss associated with present illness.	1 [ ] Greater than 1 lb weight loss in week.
2 [ ] Definite (according to patient) weight loss.	2 [ ] Greater than 2 lb weight loss in week.
3 [ ] Not assessed.	3 [ ] Not assessed.

17 INSIGHT
- 0 [ ] Acknowledges being depressed and ill.
- 1 [ ] Acknowledges illness but attributes cause to bad food, climate, overwork, virus, need for rest, etc.
- 2 [ ] Denies being ill at all.

Total score: [ ] [ ]

APPENDIX C
Young Mania Rating Scale (YMRS)

1. *Elevated Mood*
   - 0 Absent
   - 1 Mildly or possibly increased on questioning
   - 2 Definite subjective elevation; optimistic, self-confident; cheerful; appropriate to content
   - 3 Elevated, inappropriate to content; humorous
   - 4 Euphoric; inappropriate to content; singing

2. *Increased Motor Activity – Energy*
   - 0 Absent
   - 1 Subjectively increased
   - 2 Animated; gestures increased
   - 3 Excessive energy; hyperactive at times; restless (can be calmed)
   - 4 Motor excitement; continuous hyperactivity (cannot be calmed)

3. *Sexual Interest*
   - 0 Normal; not increased
   - 1 Mildly or possibly increased
   - 2 Definitive subjective increase on questioning
   - 3 Spontaneous sexual content; elaborates on sexual matters; hypersexual by self-report
   - 4 Overt sexual acts (towards patients, staff, or interviewer)

4. *Sleep*
   - 0 Reports no decrease in sleep
   - 1 Sleeping less than normal amount by up to one hour
   - 2 Sleeping less than normal by more than one hour
   - 3 Reports decreased need for sleep
   - 4 Denies need for sleep

5. *Irritability*
   - 0 Absent
   - 2 Subjectively increased
   - 4 Irritable at times during interview; recent episodes of anger or annoyance on ward
   - 6 Frequently irritable during interview; short, curt throughout
   - 8 Hostile, uncooperative; interview impossible

6. *Speech (Rate and Amount)*
   - 0 No increase
   - 2 Feels talkative
   - 4 Increased rate or amount at times, verbose at times
   - 6 Push; consistently increased rate and amount; difficult to interrupt
   - 8 Pressured; uninterruptible, continuous speech

7. *Language – Thought Disorder*
   - 0 Absent
   - 1 Circumstantial; mild distractibility; quick thoughts
   - 2 Distractible; loses goal of thought; changes topics frequently; racing thoughts
   - 3 Flight of ideas; tangentiality; difficult to follow; rhyming; echolalia
   - 4 Incoherent; communication impossible

8. *Content*
   - 0 Normal
   - 2 Questionable plans, new interests
   - 4 Special project(s); hyperreligious
   - 6 Grandiose or paranoid ideas; ideas of reference
   - 8 Delusions; hallucinations

9. *Disruptive – Aggressive Behavior*
   - 0 Absent; cooperative
   - 2 Sarcastic; loud at times; guarded
   - 4 Demanding; threats on ward
   - 6 Threatens interviewer; shouting; interview difficult
   - 8 Assaultive; destructive; interview impossible

10. *Appearance*
    - 0 Appropriate dress and grooming
    - 1 Minimally unkempt
    - 2 Poorly groomed; moderately disheveled; overdressed
    - 3 Disheveled; partly clothed; garish makeup
    - 4 Completely unkempt; decorated; bizarre garb

11. *Insight*
    - 0 Present; admits illness; agrees with need for treatment
    - 1 Possibly ill
    - 2 Admits behavior change, but denies illness
    - 3 Admits possible change in behavior, but denies illness
    - 4 Denies any behavior changes

APPENDIX D
I.P.S.A.Q.

INSTRUCTIONS

Please read the statements on the following pages. For each statement please try to vividly imagine that event happening to you. Then try to decide what was the main cause of the event described in each statement. Please write the cause you have thought of in the space provided. Then tick the appropriate letter (a,b or c) according to whether the cause is :

a) Something about you
b) Something about another person (or a group of people)
c) Something about the situation (circumstances or chance)

It might be quite difficult to decide which of these options is exactly right. In this case, please pick **one option**, the option which **best** represents your opinion. Please pick **only one** letter in each case.

Thank you for your time and co-operation.

1. A friend gave you a lift home.

What caused your friend to give you a lift home?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

2. A friend talked about you behind your back.

What caused your friend to talk about you behind your back?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

3. A friend said that he(she) has no respect for you.

What caused your friend to say that he(she) has no respect for you ?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

4. A friend helped you with the gardening.

What caused your friend to help you with the gardening?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

5. A friend thinks you are trustworthy.

What caused your friend to think you are trustworthy?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

6. A friend refused to talk to you.

What caused your friend to refuse to talk to you?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?

c. Something about the situation (circumstances or chance) ?

7. A friend thinks you are interesting.

What caused your friend to think you are interesting?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

8. A friend sent you a postcard.

What caused your friend to send you a postcard?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

9. A friend thinks you are unfriendly.

What caused your friend to think that you are unfriendly?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

10. A friend made an insulting remark to you.

What caused your friend to insult you?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?

c. Something about the situation (circumstances or chance) ?

11. A friend bought you a present.

What caused your friend to buy you a present .
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

12. A friend picked a fight with you.

What caused your friend to fight with you?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

13. A friend thinks you are dishonest.

What caused your friend to think you are dishonest?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

14. A friend spent some time talking to you.

What caused your friend to spend time talking with you?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?

b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

15. A friend thinks you are clever.

What caused your friend to think you are clever?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

16. A friend refused to help you with a job.

What caused your friend to refuse to help you with the job?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

17. A friend thinks you are sensible.

What caused your friend to think that you were sensible?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

18. A friend thinks you are unfair.

What caused your friend to think that you are unfair?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

19. A friend said that he(she) dislikes you.

What caused your friend to say that he(she) dislikes you?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

20. A friend rang to enquire about you.

What caused your friend to ring to enquire about you?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

21. A friend ignored you

What caused your friend to ignore you?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

22. A friend said that she(he) admires you.

What caused your friend to say that she(he) admired you?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

23. A friend said that he(she) finds you boring.

What caused your friend to say that he(she) finds you boring?
(Please write down the one major cause)

. . . . . .
Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

24. A friend said that she(he) resents you.

What caused your friend to say that she(he) resents you?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

25. A friend visited you for a friendly chat.

What caused your friend to visit you for a chat?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

26. A friend believes that you are honest

What caused your friend to believe that you are honest?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

27. A friend betrayed the trust you had in her.

What caused your friend to betray your trust?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

28. A friend ordered you to leave.

What caused your friend to order you to leave?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

29. A friend said that she(he) respects you.

What caused your friend to say that she(he) respects you?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

30. A friend thinks you are stupid.

What caused your friend to think that you are stupid?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

31. A friend said that he(she) liked you.

What caused your friend to say that he(she) liked you?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

32. A neighbour invited you in for a drink.

What caused your friend to invite you in for a drink?
(Please write down the one major cause)

. . . . . .

Is this :

a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

APPENDIX E

Revised reading the mind in the eyes task

Instructions

For each set of eyes, choose and circle which word best describes what the person in the picture is thinking or feeling. You may feel that more than one word is applicable but please choose just one word, the word which you consider to be most suitable. Before making your choice, make sure that you have read all 4 words. You should try to do the task as quickly as possible but you will not be timed. If you really don't know what a word means you can look it up in the definition handout.

Record Sheet

Date of Birth:..... Today's date:.....

Degree subject/occupation:.....

P	jealous	panicked	arrogant	hateful
1	playful	comforting	irritated	bored
2	terrified	upset	arrogant	annoyed
3	joking	flustered	desire	convinced
4	joking	insisting	amused	relaxed
5	irritated	sarcastic	worried	friendly
6	aghast	fantasizing	impatient	alarmed
7	apologetic	friendly	uneasy	dispirited
8	despondent	relieved	shy	excited
9	annoyed	hostile	horrified	preoccupied
10	cautious	insisting	bored	aghast
11	terrified	amused	regretful	flirtatious
12	indifferent	embarrassed	sceptical	dispirited
13	decisive	anticipating	threatening	shy
14	irritated	disappointed	depressed	accusing
15	contemplative	flustered	encouraging	amused
16	irritated	thoughtful	encouraging	sympathetic
17	doubtful	affectionate	playful	aghast
18	decisive	amused	aghast	bored
19	arrogant	grateful	sarcastic	tentative
20	dominant	friendly	guilty	horrified
21	embarrassed	fantasizing	confused	panicked
22	preoccupied	grateful	insisting	imploring
23	contented	apologetic	defiant	curious
24	pensive	irritated	excited	hostile
25	panicked	incredulous	despondent	interested
26	alarmed	shy	hostile	anxious
27	joking	cautious	arrogant	reassuring
28	interested	joking	affectionate	contented
29	impatient	aghast	irritated	reflective
30	grateful	flirtatious	hostile	disappointed
31	ashamed	confident	joking	dispirited
32	serious	ashamed	bewildered	alarmed
33	embarrassed	guilty	fantasizing	concerned
34	aghast	baffled	distrustful	terrified
35	puzzled	nervous	insisting	contemplative
36	ashamed	nervous	suspicious	indecisive

APPENDIX F

Functioning Assessment Short Test

To what extent is the patient experiencing difficulties in each of the following areas? Ask the patient about each of the 24 areas of possible difficulty in functioning and score according to the following scale: (0) no difficulty, (1) mild difficulty, (2) moderate difficulty, (3) severe difficulty.

AUTONOMY

1. Taking responsibility for a household	0 1 2 3
2. Living on your own	0 1 2 3
3. Doing the shopping	0 1 2 3
4. Taking care of yourself (physical aspects, hygiene)	0 1 2 3

OCCUPATIONAL FUNCTIONING

5. Holding down a paid job	0 1 2 3
6. Accomplishing tasks as quickly as necessary	0 1 2 3
7. Working in the field in which you were educated	0 1 2 3
8. Occupational earnings	0 1 2 3
9. Managing the expected work load	0 1 2 3

COGNITIVE FUNCTIONING

10. Ability to concentrate on a book or film	0 1 2 3
11. Ability to make mental calculations	0 1 2 3
12. Ability to solve a problem adequately	0 1 2 3
13. Ability to remember newly learned names	0 1 2 3
14. Ability to learn new information	0 1 2 3

FINANCIAL ISSUES

15. Managing your own money	0 1 2 3

16. Spending money in a balanced way 0 1 2 3

INTERPERSONAL RELATIONSHIPS

17. Maintaining a friendship or friendships 0 1 2 3
18. Participating in social activities 0 1 2 3
19. Having good relationships with people close to you 0 1 2 3
20. Living together with your family 0 1 2 3
21. Having satisfactory sexual relationships 0 1 2 3
22. Being able to defend your interests 0 1 2 3

LEISURE TIME

23. Doing exercise or participating in sport 0 1 2 3
24. Having hobbies or personal interests 0 1 2 3

APPENDIX G

Social Skills Inventory:

On the following pages are 90 statements that indicate an attitude or behavior that may or may not be characteristic or descriptive of you. Read each statement carefully. Then, using the scale shown below, decide which response will most accurately reflect your answer and darken the appropriate circle on your answer sheet. Note that you will need to work from left to right on the answer sheet.

1 = Not at all like me 2 = A little like me 3 = Like me 4 = Very much like me 5 = Exactly like me

1. It is difficult for others to know when I am sad or depressed.
2. When people are speaking, I spend as much time watching their movements as I do listening to them
3. People can always tell when I dislike them, no matter how hard I try to hide my feelings.
4. I enjoy giving parties.
5. Criticism or scolding rarely makes me feel uncomfortable.
6. I can be comfortable with all types of people -- young and old, rich and poor.
7. I talk faster than most people.
8. Few people are as sensitive and understanding as I am.
9. It is often hard for me to keep a "straight face" when telling a joke or humorous story.
10. It takes people quite a while to get to know me well.
11. My greatest source of pleasure and pain is other people.
12. When I'm with a group of friends, I am often the spokesperson for the group.
13. When depressed, I tend to make those around me depressed also
14. At parties, I can immediately tell when someone is interested in me.
15. People can always tell when I am embarrassed by the expression on my face.
16. I love to socialize.
17. I would much rather take part in a political discussion that to observe and analyze what the participants are saying.
18. Sometimes I find it difficult to look at others when I am talking about something personal.
19. I have been told that I have expressive eyes.
20. I am interested in knowing what makes people tick.
21. I am not very skilled in controlling my emotions.
22. I prefer jobs that require working with a large number of people.
23. I am greatly influenced by the moods of those around me.
24. I am not good at making prepared speeches.

25. I usually feel uncomfortable touching other people.
26. I can easily tell what a person's character is by watching his or her interactions with others.
27. I am able to conceal my true feelings from just about anyone.
28. I always mingle at parties.
29. There are certain situations in which I find myself worrying about whether I am doing or saying the right things.
30. I find it very difficult to speak in front of a large group of people.
31. I often laugh out loud.
32. I always seem to know what peoples' true feelings are no matter how hard they try to conceal them.
33. I can keep a straight face even when friends try to make me laugh or smile.
34. I usually take the initiative to introduce myself to strangers.
35. Sometimes I think that I take things other people say to me too personally.
36. When in a group or people, I have trouble thinking of the right things to talk about.
37. Sometimes I have trouble making my friends and family realize just how angry or upset I am with them.
38. I can accurately tell what a person's character is upon first meeting him or her.
39. It is very hard for me to control my emotions.
40. I am usually the one to initiate conversations.
41. What others think about my actions is of little or no consequence to me.
42. I am usually very good at leading group discussions.
43. My facial expression is generally neutral.
44. One of my greatest pleasures in life is being with other people
45. I am very good at maintaining a calm exterior even if I am upset.
46. When telling a story, I usually use a lot of gestures to help get the point across.
47. I often worry that people will misinterpret something I have said to them.
48. I am often uncomfortable around people whose social class is different from mine.
49. I rarely show my anger.
50. I can instantly spot a "phony" the minute I meet him or her.
51. I usually adapt my ideas and behavior to the group I happen to be with at the time.
52. When in discussions, I find myself doing a large share of the talking.
53. While growing up, my parents were always stressing the importance of good manners.
54. I am not very good at mixing at parties.
55. I often touch my friends when talking to them.

56. I dislike it when other people tell me their problems.
57. While I may be nervous on the inside, I can disguise it very well from others.
58. At parties I enjoy talking to a lot of different people.
59. I can be strongly affected by someone smiling or frowning at me.
60. I would feel out of place at a party attended by a lot of very important people.
61. I am able to liven up a dull party.
62. I sometimes cry at sad movies.
63. I can make myself look as if I'm having a good time at a social function even if I'm not really enjoying myself at all.
64. I consider myself a loner.
65. I am very sensitive of criticism.
66. Occasionally I've noticed that people from different backgrounds seem to feel uncomfortable around me.
67. I dislike being the center of attention.
68. I am easily able to give a comforting hug or touch someone who is distressed.
69. I am rarely able to hide a strong emotion.
70. I enjoy going to large parties and meeting new people.
71. It is very important that other people like me.
72. I sometimes say the wrong thing when starting a conversation with a stranger.
73. I rarely show my feelings or emotions.
74. I can spend hours just watching other people.
75. I can easily pretend to be mad even when I am really feeling happy.
76. I am unlikely to speak to strangers until they speak to me.
77. I get nervous if I think someone is watching me.
78. I am often chosen to be the leader of a group.
79. Friends have sometimes told me that I talk too much.
80. I am often told that I am a sensitive, understanding person.
81. People can always "read" my feelings even when I'm trying to hide them.
82. I tend to be the "life of the party."
83. I'm generally concerned about the impression I'm making on others.
84. I often find myself in awkward social situations.
85. I never shout or scream when angry.
86. When my friends are angry or upset, they seek me out to help calm them down.
87. I am easily able to make myself look happy one minute and sad the next.

can spend hours just watching other people.

88. I could talk for hours on just about any subject.

89. I am often concerned with what others are thinking of me.

90. I can easily adjust to being in just about any social situation.

INFORMED PATIENT CONSENT

Date: _____

I……..D/o, W/o, S/o…… ……am willing to participate in the study "**STUDY OF SOCIAL COGNITION, SOCIAL SKILLS AND FUNCTIONAL OUTCOMES IN PATIENTS WITH BIPOLAR DISORDER**" The procedure with its complications has been explained to me in local vernacular language. I have fully understood that no special tests and extra expenditure in any form, merely for the purpose of thesis is being carried out. I am free to opt out the study any time without assigning any reason.

…… ……

Signature of the Witness Signature of the patient

Name:

Signature of Candidate **Signature of Supervisor**

<u>मरीज अनुमति फार्म</u>

तिथि_____

मैं_____ पत्नी/पुत्र/ पुत्री_____

निवासी_____

इस शोधकार्य "**STUDY OF SOCIAL COGNITION, SOCIAL SKILLS AND FUNCTIONAL OUTCOMES IN PATIENTS WITH BIPOLAR DISORDER**"लिए सहमत हूँ। मैं इस शोधकार्य में भाग लेने में भाग लेने के करताके लिए अपनी स्वेच्छा से तैयार हूँ। मैं पुष्टि/करती हूँ की यह स्वीकृति देने के लिए मुझे कोई आर्थिक प्रलोभन नहीं दिया गया और न ही दबाव डाला यह कर दिया गया है और मुझेश्य स्पष्टगया है। मुझे इस शोधकार्य का उद्दे स है की यह विज्ञान और मानवता के लाभ के लिए है। मुझे इस विश्वा शोधकार्य में होने वाले जोखिम के बारे में समझा दिया गया है और मेरी समझ में यह जोखिम बहुत मामुली है।

मैं इस शोधकार्य में भाग लेने के सम्बन्ध में किसी भी समय अपनी कर सकताअस्वीकृति व्यक्त/ करने का हूँ और मेरे अस्वीकृति व्यक्त सकती मेरे इलाज पर कोई प्रभाव नहीं पड़ेगा।

_____ _____

गवाह के हस्ताक्षर रोगी के हस्ताक्षर/ अंगूठे का निशान

नाम: नाम:

_____

अन्वेषक केहस्ताक्षर

_____

विद्यार्थी के हस्ताक्षर

ਮਰੀਜ਼ ਰਜ਼ਾਮੰਦੀ ਫਾਰਮ

ਮਿਤੀ_____

ਮੈ_____ਪਤਨੀ/ਪੁੱਤਰ/ਪੁੱਤਰੀ_____

ਵਾਸੀ_____ _____

“STUDY OF SOCIAL COGNITION, SOCIAL SKILLS AND FUNCTIONAL OUTCOMES IN PATIENTS WITH BIPOLAR DISORDER” ਤੇ ਚਲ ਰਹੀ ਖੋਜ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਲਈ ਰਜ਼ਾਮੰਦ ਹਾਂ ।ਇਸ ਖੋਜ ਕੰਮ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਲਈ ਮੈ ਆਪਣੀ ਮਰਜ਼ੀ ਨਾਲ ਤਿਆਰ ਹਾਂ ।ਮੈ ਇਹ ਦਸਣਾ ਚਾਹੁੰਦਾ ਹਾਂ/ ਚਾਹੁੰਦੀ ਹਾਂ ਕੇ ਇਹ ਰਜ਼ਾਮੰਦੀ ਦੇਣ ਵਾਸਤੇ ਮੈਨੂ ਕਿਸੇ ਵੀ ਤਰਾਂ ਦਾ ਲੋਭ-ਲਾਲਚ ਨਹੀ ਦਿੱਤਾ ਗਿਆ ਅਤੇ ਨਾ ਹੀ ਕੋਈ ਦਬਾ ਪਾਇਆ ਗਿਆ ਹੈ। ਮੈਨੂ ਇਸ ਖੋਜ ਦਾ ਮਨੋਰਥ ਸਮਝਾ ਦਿੱਤਾ ਗਿਆ ਹੈ ਅਤੇ ਮੈਨੂ ਇਹ ਭਰੋਸਾ ਦਵਾਇਆ ਗਿਆ ਹੈ ਕੇ ਇਹ ਖੋਜ ਵਿਗਿਆਨ ਅਤੇ ਮਾਨਵਤਾ ਦੀ ਭਲਾਈ ਲਈ ਹੈ । ਮੈਨੂ ਇਸ ਖੋਜ ਵਿਚ ਹੋਣ ਵਾਲੇ ਖਤਰੇ ਬਾਰੇ ਸਮਝਾ ਦਿੱਤਾ ਗਿਆ ਹੈ ਅਤੇ ਮੈਨੂ ਇਹ ਯਕੀਨ ਹੈ ਕੇ ਇਹ ਖਤਰਾ ਬਹੁਤ ਮਾਮੂਲੀ ਹੈ ।ਮੈਨੂ ਇਸ ਖੋਜ ਕੰਮ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਦਾ ਢੰਗ – ਤਰੀਕਾ ਸਮਝਾ ਦਿੱਤਾ ਗਿਆ ਹੈ।

ਮੈ ਇਸ ਖੋਜ ਕੰਮ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਬਾਰੇ ਆਪਣੀ ਰਜ਼ਾਮੰਦੀ ਕਿਸੇ ਵੀ ਸਮੇ ਵਾਪਸ ਲੈ ਸਕਦਾ ਹਾਂ/ ਸਕਦੀ ਹਾਂ ਅਤੇ ਮੇਰੀ ਰਜ਼ਾਮੰਦੀ ਵਾਪਸ ਲੈਣ ਦਾ ਮੇਰੇ ਇਲਾਜ ਤੇ ਕੋਈ ਅਸਰ ਨਹੀ ਹੋਵੇਗਾ।

_____ _____

ਗਵਾਹ ਦੇ ਹਸਤਾਖਰ ਮਰੀਜ਼ ਦੇ ਹਸਤਾਖਰ

ਮਿਤੀ_____ _____ਮਿਤੀ

ਪਤਾ _____ ਪਤਾ_____

_____

ਨਿਰੀਖਕ ਦੇ ਹਸਤਾਖਰ

_____

ਸਿਖਿਆਰਥੀ ਦੇ ਹਸਤਾਖਰ